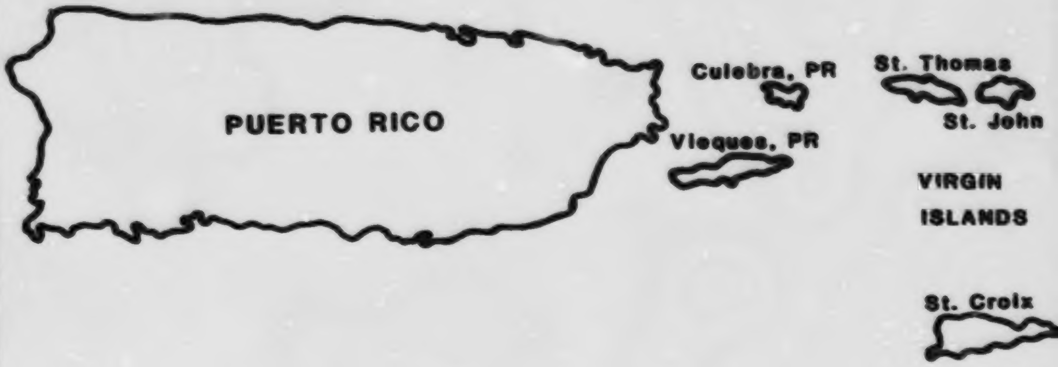
Water Resources Data Puerto Rico and the U.S. Virgin Islands

Water Year 1984

By Russell E. Curtis, Senén Guzmán-Ríos, and Pedro L. Díaz


PUERTO RICO
Culebra, PR
St. Thomas
St. John
Vieques, PR
VIRGIN ISLANDS
St. Croix

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PR-84-1

Prepared in cooperation with the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands, and other agencies

I

UNITED STATES DEPARTMENT OF THE INTERIOR

DONALD PAUL HODEL, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

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PREFACE

This annual hydrologic data report of Puerto Rico and the U.S. Virgin Islands is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each state, Puerto Rico, the U.S. Virgin Islands, and the other Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by state, local and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

The report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey, Water Resources Division who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete and adheres to Geological Survey policy and established guidelines, the following personnel contributed significantly to the collection, processing and tabulations of the data:

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This report was prepared in cooperation with agencies of the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands, and with other federal agencies, under the general supervision of Ferdinand Quiñones, District Chief, Caribbean District, San Juan, Puerto Rico.

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Water-resources data for surface-water, quality-of-water, and ground-water records for the 1984 water year for Puerto Rico and the U.S. Virgin Islands, consist of records of discharge, water quality of streams, and water levels of wells. This report contains discharge records for 57 gaging stations; stage only records for four lakes; water quality for 63 streamflow or lagoon sites, 11 partial-record sites, and 17 wells; and water levels for 97 observation wells. Also included are data for 131 low-flow and 1 crest-stage partial record-stations. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating local and federal agencies in Puerto Rico and the U.S. Vigin Islands.

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CONTENTS

Page

Preface.. III
Contents... V
Illustrations.. V
Tables... VI
Introduction... 1
Cooperation.. 1
Summary of hydrologic conditions......................... 2
Definition of terms...................................... 9
Downstream order and station numbers..................... 16
Numbering system for wells and miscellaneous sites....... 17
Special networks and programs............................ 17
Explanation of stage and water-discharge records......... 18
  Collection and computation of data..................... 18
  Accuracy of field data and computed results............ 21
  Other data available................................... 22
Explanation of water-quality records..................... 22
  Collection and examination of data..................... 22
  Water analysis... 23
  Water temperature...................................... 23
Sediment... 24
Explanation of ground-water level records................ 24
  Collection of the data................................. 24
Surface- and quality-of-water records for Puerto Rico.... 27
Discharge at partial-record stations in Puerto Rico...... 267
Analyses of samples collected at water-quality partial-record
  stations in Puerto Rico................................ 285
Ground-water records for Puerto Rico..................... 297
Surface-water records for the U.S. Virgin Islands........ 337
Ground-Water records for the U.S. Virgin Islands......... 347
Index.. 369

ILLUSTRATIONS

Figure 1. Graph showing comparison of 1984 water year monthly-mean discharges to long-term medians of monthly-mean discharges at selected stream-gaging stations......... 3
2. Graph showing ground-water levels at selected sites in Puerto Rico and the U.S. Virgin Islands during 1984 water year............................ 5
3. Map showing location of maximum concentration of fecal coliform bacteria at sampled sites during water year 1984............................ 6
4. Map showing location of maximum concentrations of fecal streptococci bacteria at sampled sites during water year 1984............................ 7
5. System for numbering wells and miscellaneous sites (latitude and longitude)............................ 17

ILLUSTRATIONS--Continued

Page

Figure 6. Map showing location of continuous surface-water stations in Puerto Rico.......... 28
7. Map showing location of water-quality stations in Puerto Rico.......... 29
8. Map showing location of low-flow partial-record stations in Eastern Puerto Rico.......... 30
9. Map showing location of low-flow partial-record stations in Central and Western Puerto Rico.......... 31
10. Map showing Río Guajataca basin.......... 33
11. Map showing Río Camuy basin.......... 43
12. Map showing Río Grande de Arecibo basin.......... 47
13. Map showing Río Grande de Manatí basin.......... 69
14. Map showing Río Cibuco basin.......... 87
15. Map showing Río de la Plata basin.......... 101
16. Map showing Río Hondo to Río Puerto Nuevo basins.......... 113
17. Map showing Río Grande de Loíza basin.......... 129
18. Map showing northeastern river basins--Río Herrera to Río Antón Ruíz basins.......... 159
19. Map showing southeastern river basins--Río Humacao to Río Seco basins.......... 185
20. Map showing south coast river basins--Río Salinas to Río Jacaguas basins.......... 203
21. Map showing south coast river basins--Río Inabón to Río Loco basins.......... 209
22. Map showing Río Guanajibo basin 231
23. Map showing Río Yagüez and Río Grande de Añasco basins.. 243
24. Map showing Río Culebrinas basin.......... 259
25. Map showing location of ground-water stations.......... 298
26. Map showing location of surface-water stations in the U.S. Virgin Islands.......... 338
27. Map showing location of ground-water stations in the U.S. Virgin Islands.......... 348

TABLES

Table 1. Maximum concentrations of trace metals of NASQAN stations, water year 1984. (Concentrations in micrograms per liter (ug/L)).......... 8
2. Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter.......... 12
3. Degrees Celsius (°C) to degrees Fahrenheit (°F).......... 23

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WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1984

INTRODUCTION

Water resources data for the 1984 water year for Puerto Rico and the U.S. Virgin Islands consists of stage, discharge, and water quality of streams; stage and water quality of lakes and lagoons; and water levels and quality of ground water. This report contains discharge records for 57 gaging stations; stage only records for four lakes; water quality for 63 streamflow or lagoon sites, 11 partial-record sites, and 17 wells; and water levels for 97 observation wells. Also included are data for 131 low-flow and 1 crest-stage partial record-stations. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating local and federal agencies in Puerto Rico and the U.S. Virgin Islands.

Water-resources data for Puerto Rico for calendar years 1958-67 were released in a series of reports entitled "Water Records of Puerto Rico". Water-resources data for the U.S. Virgin Islands for the calendar years 1962-69 were released in a report entitled "Water Records of U.S. Virgin Islands." Included were records of streamflow, ground-water levels, and water-quality data for both surface and ground water.

Beginning with the 1968 calendar year, surface-water records for Puerto Rico were released separately on an annual basis. Ground-water level records and water-quality data for surface and ground water were released in companion reports covering periods of several years. Data for the 1973-74 reports were published under separate covers. Water-resources data reports for 1975-76, 1977, 1978, 1979-80, 1981-82, and 1983 water years consist of one volume each and contain data for streamflow, water quality and ground water. These official Survey reports carry an identification number consisting of the two-letter state abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report PR-84-1." Water Data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia, 22161.

COOPERATION

The U.S. Geological Survey has had cooperative agreements with organizations of the Commonwealth of Puerto Rico and the Territory of the U.S. Virgin Islands for the systematic collections of water resources data since 1958. Organizations that supplied data are acknowledged in the station descriptions. Organizations that assisted in collecting data through cooperative agreements with the Survey are:

Puerto Rico Environmental Quality Board
Puerto Rico Aqueduct and Sewer Authority
Puerto Rico Department of Agriculture
Puerto Rico Industrial Development Company
Puerto Rico Department of Public Works
Puerto Rico Highway Authority
Puerto Rico Department of Natural Resources
Puerto Rico Department of Health
Puerto Rico Electric and Power Authority

Puerto Rico Rice Corporation
Puerto Rico Administration for Agricultural Development
Puerto Rico Land Administration
Center for Energy and Environment Research, University
of Puerto Rico
Water Resources Research Institute, University of Puerto Rico
Water Resources Research Institute, College of the Virgin Islands
Department of Public Works of the U.S. Virgin Islands

Funds were also provided by the Corps of Engineers, U.S. Army, for the collection of records at five gaging stations published in this report. Ground-water quality data at selected sites was collected with support from the U.S. Evironmental Protection Agency.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow

Streamflow in Puerto Rico during the 1984 water year was generally below normal. It increased considerably in October, but remained significantly below normal during the remainder of the water year throughout most of the island. The exception was in the west, where it was well above normal most of the time.

The dry season experienced during the winter months became evident in reduced flows as recorded for the index stations (fig. 1). The unusually low streamflow continued to decline through March. The drought that affected the island caused the lowest levels in at least 20 years establishing low flow records for various gaged sites. For the northern and eastern river basins, flows were about 50 percent of normal.

This severe drought came to an end at mid May and streamflow returned to normal. By June, streamflow increased to two to three times normal in the west. At this time, the second highest monthly mean since records began in 1964 was recorded at the index station on Río Grande de Añasco.

During August, streamflow declined islandwide to below normal. Deficiencies in runoff were the most significant on the north coast. This drought ended in September as streamflow increased dramatically. The most significant changes occurred in the north and west areas where at many gaging sites the maximum flows for the year were recorded. On the Río Grande de Manatí, located in the northern area, the average for September was the second highest recorded since records began in 1964.

In the U.S. Virgin Islands, conditions were in general the same as in Puerto Rico. During the year most streams were dry or nearly so, particularly in St. Croix and St. John.

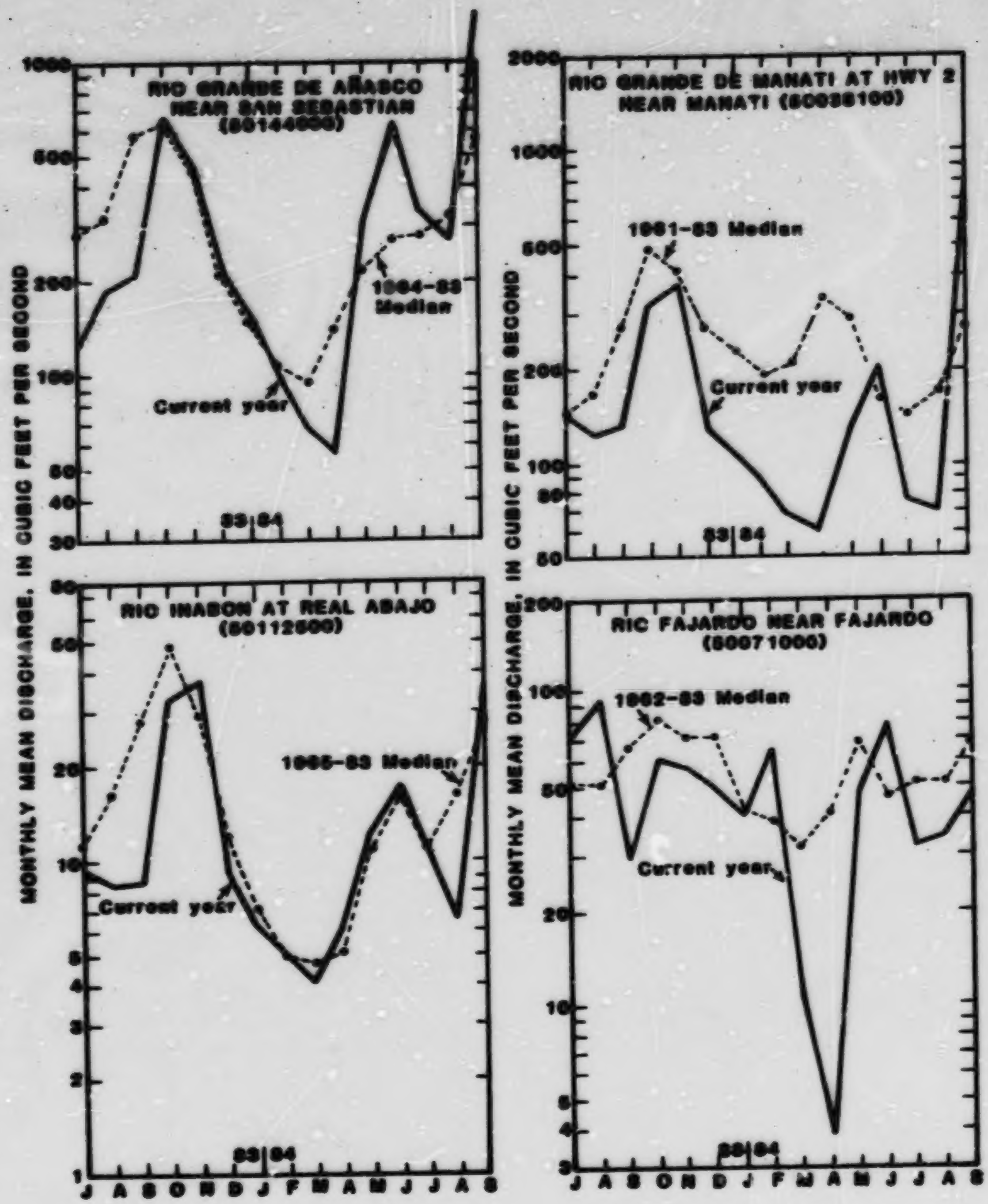

Figure 1.--Comparison of 1984 water year monthly-mean discharges to long-term medians of monthly-mean discharges at selected stream-gaging stations.

Ground Water

Ground-water levels along the north coast limestone aquifers of Puerto Rico remained nearly unchanged during the 1984 water year (October 1983 to September 1984). A slight declining trend was observed during the first half of the water year followed by a slow recovery during the last half of the year in response to seasonal rainfall patterns. These near equilibrium conditions are a typical response of the north coast aquifers to average rainfall conditions.

Ground-water levels along the south coast alluvial aquifers followed a cyclic pattern associated with rainfall and ground-water withdrawals for public supply, industrial and irrigation uses. Above normal rainfall from October to November 1983 caused ground-water levels to increase. Scarce rainfall and increasing water demands for irrigation resulted in decreasing levels through the end of the 1984 water year. At the Alomar well a maximum decline of 7.5 feet in the ground-water levels was recorded (fig. 2).

Ground-water levels in the U.S. Virgin Islands (St. Thomas, St. Croix and St. John) followed a pattern similar to the south coast aquifers of Puerto Rico (fig. 2). Early in November 1983, above normal rainfall resulted in an increase up to 8.0 feet in the ground-water levels. After this event, the ground-water levels declined significantly as rainfall was almost zero and ground-water withdrawals for public-water supply increased. In several areas of St. Thomas and St. Croix, a decline of 15 feet in the ground-water levels was recorded.

Water-Quality

The results of the surface-water quality sampling program during water year 1984 indicated the presence of fecal coliform bacterias in high concentrations and the presence of some organic compounds. Concentrations of fecal coliform, and fecal streptococci bacterias exceed 1 million colonies counts per one hundred milliliters of raw water (10^6 col/100 ml) in many streams. Río Hondo at Flood Channel near Cataño (50047530), Quebrada Blasina near Carolina (50050300), Río Caguitas near Caguas(50055250), Río Bairoa near Caguas (50055400), Río Chico at Central Providencia (50091800), and Río Guayanilla at Central Rufina (50124700) are among them (fig. 3 and 4). These sites are located close to urban zones, industrial parks and surburban zones not served by sewage systems. Septic tanks, cesspools, leaks in sewage system, runoff from beef cattle feed lots, and percolation from waste ponds appear to be the main source of bacterias in streams throughout Puerto Rico. Drinking water standards recommend that the geometric mean of fecal coliform density in raw water for public supply should not exceed 2,000 colonies per 100 ml of water (EPA, 1975). The standard for contact and recreational purposes is 1,000 col/100 ml.

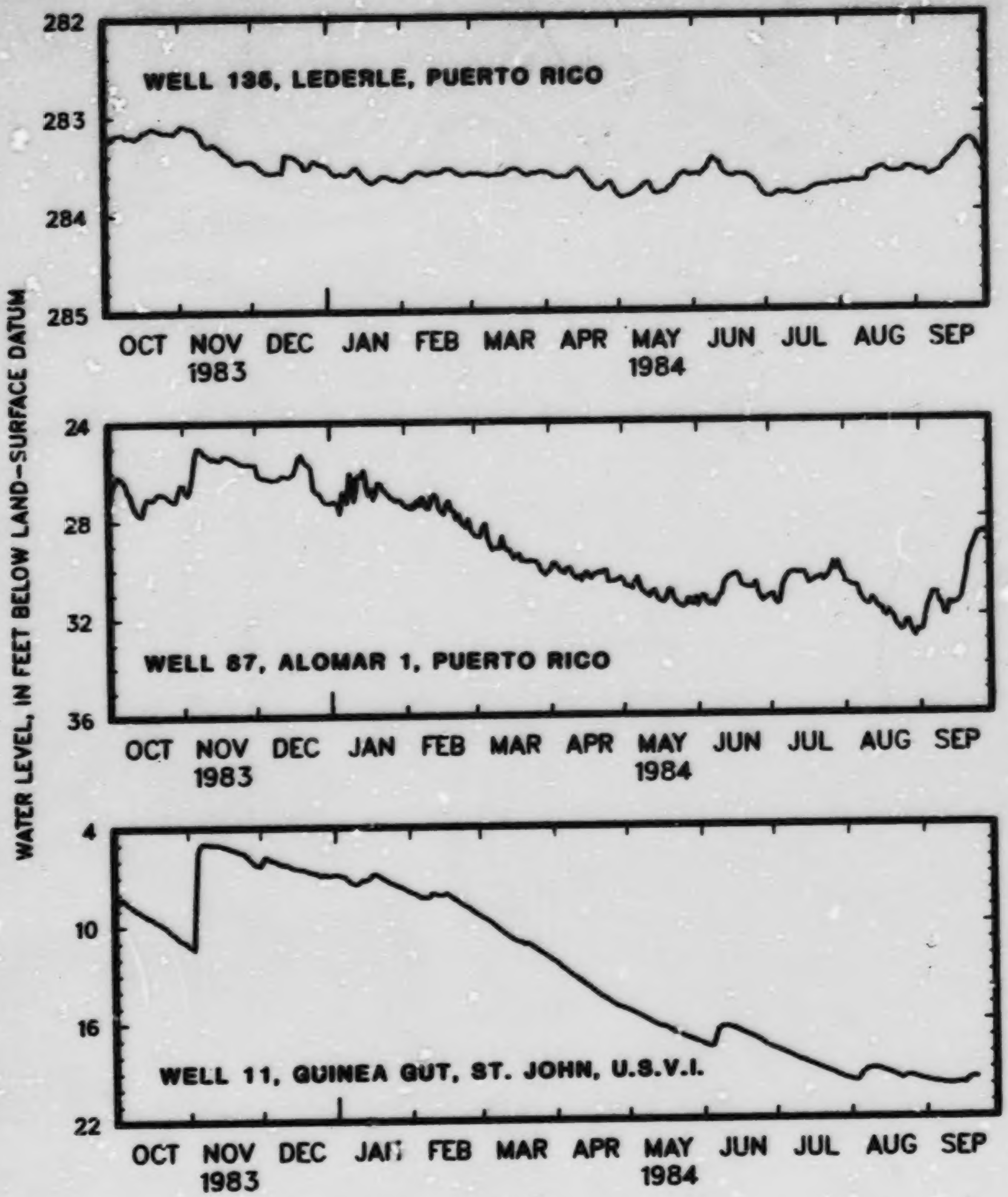

Figure 2.--Ground-water levels at selected sites in Puerto Rico and the U.S. Virgin Islands during 1984 water year.

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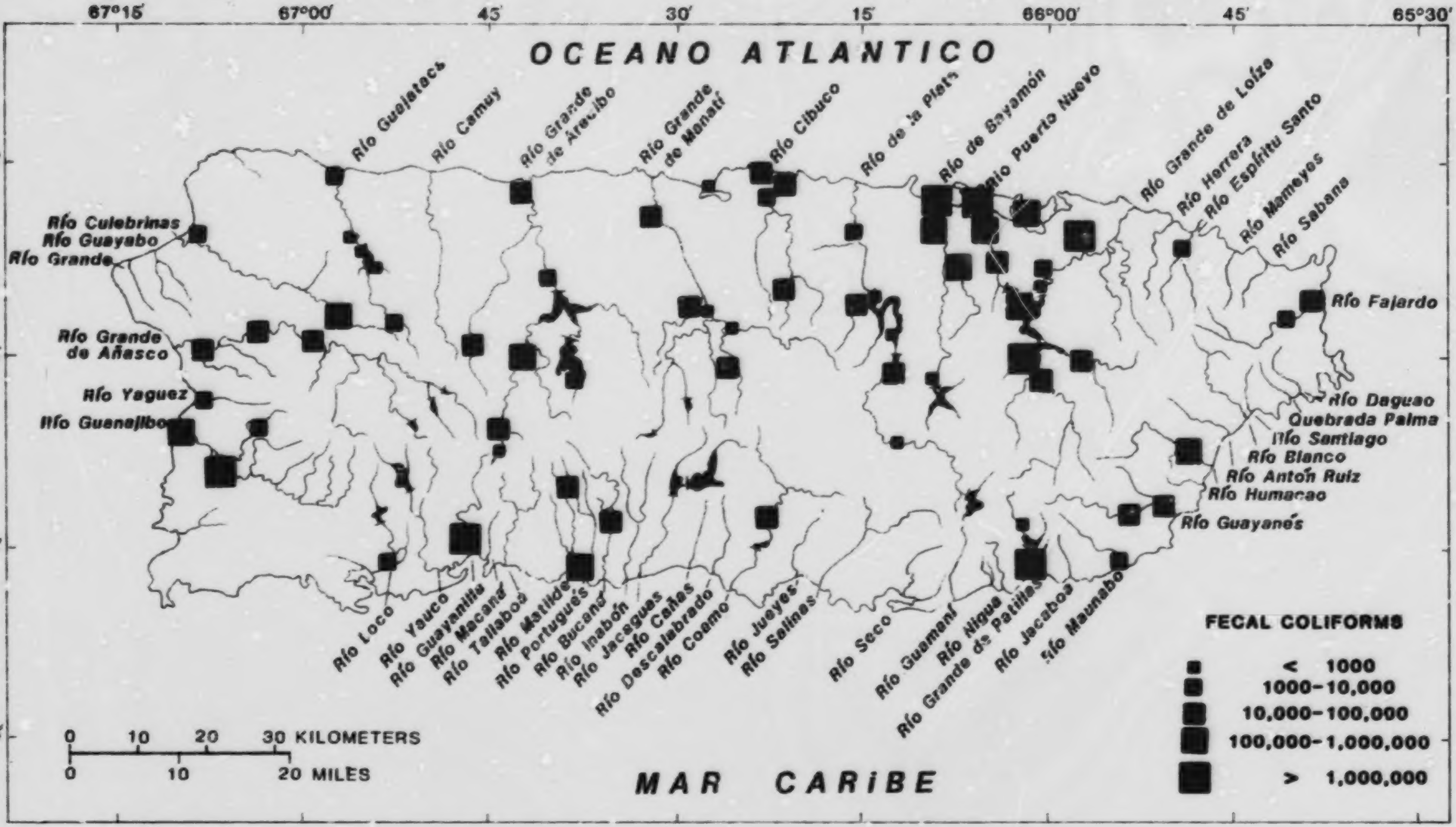
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Río Cibuco
Río de la Plata
Río de Bayamón
Río Puerto Nuevo
Río Grande de Loíza
Río Herrera
Río Espíritu Santo
Río Mameyes
Río Sabana
Río Fajardo
Río Culebrinas
Río Guayabo
Río Grande
Río Grande de Añasco
Río Yaguez
Río Guanajibo
Río Daguao
Quebrada Palma
Río Santiago
Río Blanco
Río Antón Ruiz
Río Humacao
Río Guayanés
Río Loco
Río Yauco
Río Guayanilla
Río Macaná
Río Tallaboa
Río Matilde
Río Portugués
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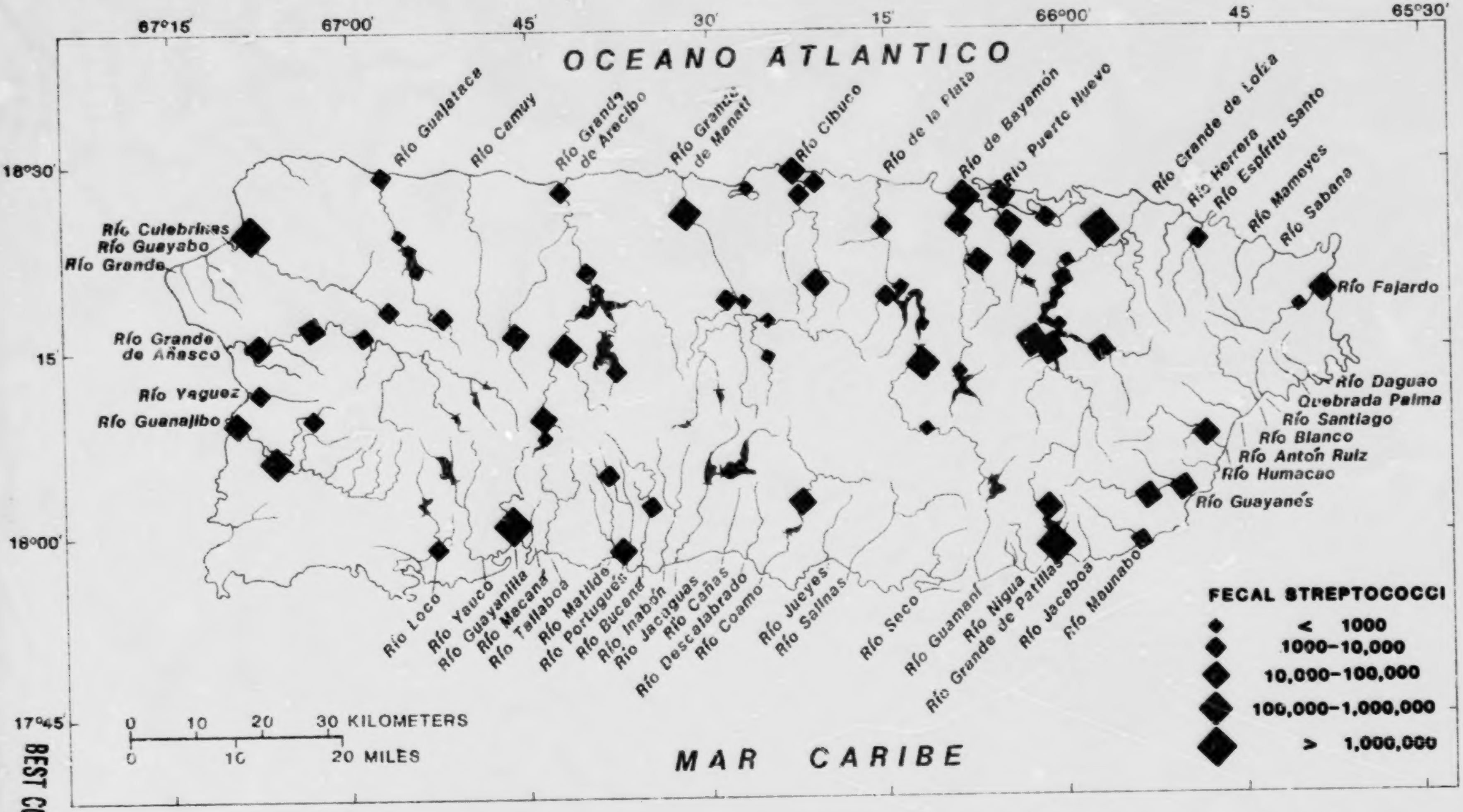
Figure 3.--Location of maximum concentration of fecal coliform bacteria at sampled sites during water year 1984 in Puerto Rico.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Río Yaguez
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100,000-1,000,000
> 1,000,000

Figure 4.--Location of maximum concentrations of fecal streptococci bacteria at sampled sites during water year 1984 in Puerto Rico.

A considerable increase in the concentration of key inorganic elements and/or compounds also is also an important index of the pollution of a body of water. Trace elements which are normally absent or nearly so in the natural environment are arsenic, cadmium, chromium, lead, mercury, selenium and silver. Water samples for analyses of those compounds were collected twice during the year at most of the monitoring sites. At the index National Stream Quality Accounting Network (NASQAN) stations, samples for analyses of trace metals were collected four times. Maximum concentrations of some of them are listed in table 1.

TABLE 1 . Maximum concentrations of trace metals of NASQAN stations, Water Year 1984. (Concentrations in micrograms per liter(µg/L).

Station number and name	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
50038100 - Río Grande de Manatí at Hwy 2 near Manatí	0.2	65	<1	<1	4	0.3	<1	2
50046000 - Río de la Plata at Toa Alta	.2	81	<1	<1	1	.6	<1	<1
50092000 - Río Grande de Patillas on Patillas	.1	24	<1	3	2	.2	<1	<1
50144000 - Río Grande de Añasco near San Sebastián	.2	49	<1	<1	3	.1	<1	<1

Maximum permissible concentrations of these compounds in drinking water have been established by the Environmental Protection Agency (1976) as follows:

Constituent	Concentration Micrograms per liter (µg/L)
Arsenic	50
Cadmium	10
Chromium	50
Lead	50
Mercury	2
Selenium	10
Silver	50

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data as used in this report, are defined below. See also the table for converting inch-pound units to the International System of units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multicelled plants containing chlorophyll and lacking roots, stems, and leaves.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C + 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as grampositive, coccie bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are definedas all the organisms which produce red or pink colonies within 48 hours at 35°C + 1.0°C on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C + 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond,reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow or 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of saltwater.

Crest-stage station is a special form of partial-record station that records the highest stage of the stream that occurred between periodic visits to the station. A stage-discharge relation for each gage may be developed from discharge measurements made by indirect methods or by current meter.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet or water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (cu ft/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to the amount of substance present in true chemical solution. In practice, however, the term includes all forms of substance that will pass through a 0.45-micrometer membrane filter, and thus may include some very small (colloidal) suspended particles. Analyses are performed on filtered samples.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Ground-water station is a well at which observations of ground-water level are made, either continuously by recorder, or periodically by hand. In addition, various chemical or physical parameters may be obtained, usually on a periodic basis.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO).

Micrograms per gram (ug/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical consitutents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture. Conversion of chemical concentrations in Mg/L to milliequivalents per liter can be done by using the factors in table 2.

TABLE 2.--Factors for conversion of chemical constituents in milligrams per liter to milliequivalents per liter.

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3}) *	0.11119	Iodide (I^{-1})	0.00788
Ammonia as NH_4^{+1}	.05544	Iron (Fe^{+3})*	.05372
Barium (Ba^{+2})	.01456	Lead (Pb^{+2})*	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1})*	.14411
Bromide (Br^{-1})	.01251	Magnesium (Mg^{+2})	.08226
Calcium (Ca^{+2})	.04990	Manganese (Mn^{+2})*	.03640
Carbonate (CO_3^{-2})	.03333	Nickel (Ni^{+2})*	.03406
Chloride (Cl^{-1})	.02821	Nitrate (NO_3^{-1})	.01613
Chromium (Cr^{+6})*	.11539	Nitrite (NO_2^{-1})	.02174
Cobalt (Co^{+2})*	.03394	Phosphate (PO_4^{-3})	.03159
Copper (Cu^{+2})*	.03148	Potassium (K^{+1})	.02557
Cyanide (CN^{-1})*	.03844	Sodium (Na^{+1})	.04350
Fluoride (F^{-1})	.05264	Strontium (Sr^{+2})*	.02283
Hydrogen (H^{+1})	.99209	Sulfate (SO_4^{-2})	.02082
Hydroxide (OH^{-1})	.05880	Zinc (Zn^{+2})*	.03060

*Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle-size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	0.00024 - 0.004	Sedimentation
Silt	.004 - .062	Sedimentation
Sand	.062 - 2.0	Sedimentation or sieve
Gravel	2.0 - 64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass or volume.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants, respectively, are the two categories reported.

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times concentration times 0.0027.

The suspended-sediment concentration (mg/L) and suspended-sediment discharge (tons/day) except in stations 50028000 and 50071000 are based on instantaneous discharge and do not necessarily represent the actual daily discharge of suspended sediment.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electric current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, limbata is the following:

Kingdom...............Animal
Phylum............Arthropoda
Class................Insecta
Order..........Ephemeroptera
Family...........Ephemeridae
Genus..............Hexagenia
Species....Hexagenia limbata

Water year in Geological Survey reports dealing with surface water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends. Thus, the water year beginning October 1, 1976 and ending September 30, 1977 is called the "1977 water year."

Weighted average is used in this report to indicate discharge-weighted average for days computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published REPORTS.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations in first rank, second rank, and other ranks of tributaries.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 50028000, which appears just to the left of the station name, includes the 2-digit part number "50" plus the 6-digit downstream order number "028000."

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. The numbers shown in the grid correspond to the local numbers assigned to each well as visited in the field. An example is well 16 (fig. 5 , below).

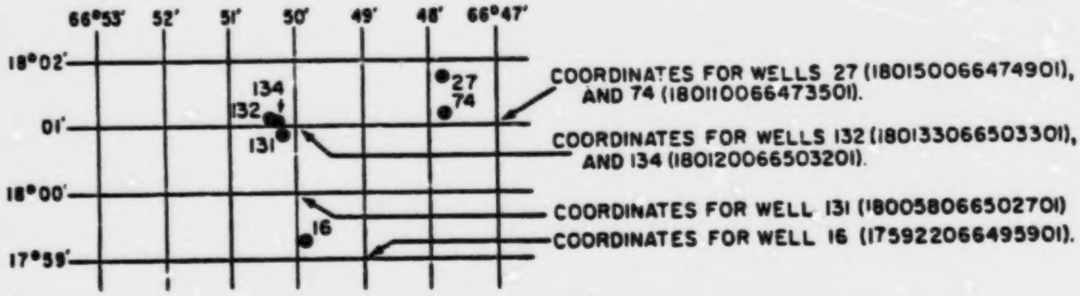
66°53'
52'
51'
50'
49'
48'
66°47'
18°02'
01'
18°00'
17°59'
27
74
134
132
131
16
COORDINATES FOR WELLS 27 (180150066474901), AND 74 (180110066473501).
COORDINATES FOR WELLS 132 (180133066503301), AND 134 (180120066503201).
COORDINATES FOR WELL 131 (180058066502701)
COORDINATES FOR WELL 16 (175922066495901).

Figure 5.--System for numbering wells and miscellaneous sites (latitude and longitude).

SPECIAL NETWORKS AND PROGRAMS

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams. In addition, observations of factors affecting the stage-discharge relation or the weather records, and other information are used to supplement base data in determining the daily flow. Records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is loose in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams a table showing the daily discharge and monthly and yearly discharge is given. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or elevation. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Period of backwater from an unusual source, or indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

Data collected at partial-record water-quality stations follows the information for continuous-record sites. Data for partial-record discharge stations are presented in one table. This table shows the annual maximum stage and discharge at crest-stage stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good," within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cu ft/s; to tenths between 1.0 and 10 cu ft/s; to whole numbers between 10 and 1,000 cu ft/s; and to 3 significant figures above 1,000 cu ft/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also, most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Access to WATSTORE Data

The National WATer Data STOrage and REtrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's Division's district offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations. The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (sediment discharge); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, date of sampling/and or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations. One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross sections is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

Water temperature

Water temperatures were measured at all water-quality stations on the Celcius scale. In addition, temperatures were taken during discharge measurements for water-discharge stations. Degrees Celsius can be converted to degrees Farenheit as shown in table 3. Large streams have a small daily temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

Table 3.--Conversion of Temperature Scales Degrees Celcius (°C) to Degrees Farenheit (°F)

°C	°F	°C	°F	°C	°F
15.0	59	21.0	70	27.0	81
15.5	60	21.5	71	27.5	82
16.0	61	22.0	72	28.0	82
16.5	62	22.5	72	28.5	83
17.0	63	23.0	73	29.0	84
17.5	64	23.5	74	29.5	85
18.0	64	24.0	75	30.0	86
18.5	65	24.5	76	30.5	87
19.0	66	25.0	77	31.0	88
19.5	67	25.5	78	31.5	89
20.0	68	26.0	79	32.0	90
20.5	69	26.5	80		

°F = 9/5 (°C) + 32 or * °C = 5/9 (°F − 32)

Sediment

Suspended-sediment concentrations are determined from water-sediment samples collected by using depth-integrating or automatic sediment samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the amounts of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment are included.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs. See figure 6.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures; hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference either to mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum is given in each well description. The height of the measuring point (M.P.) above or below low-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every day.

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a large unit.

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Surface and Quality-of-Water Records for Puerto Rico

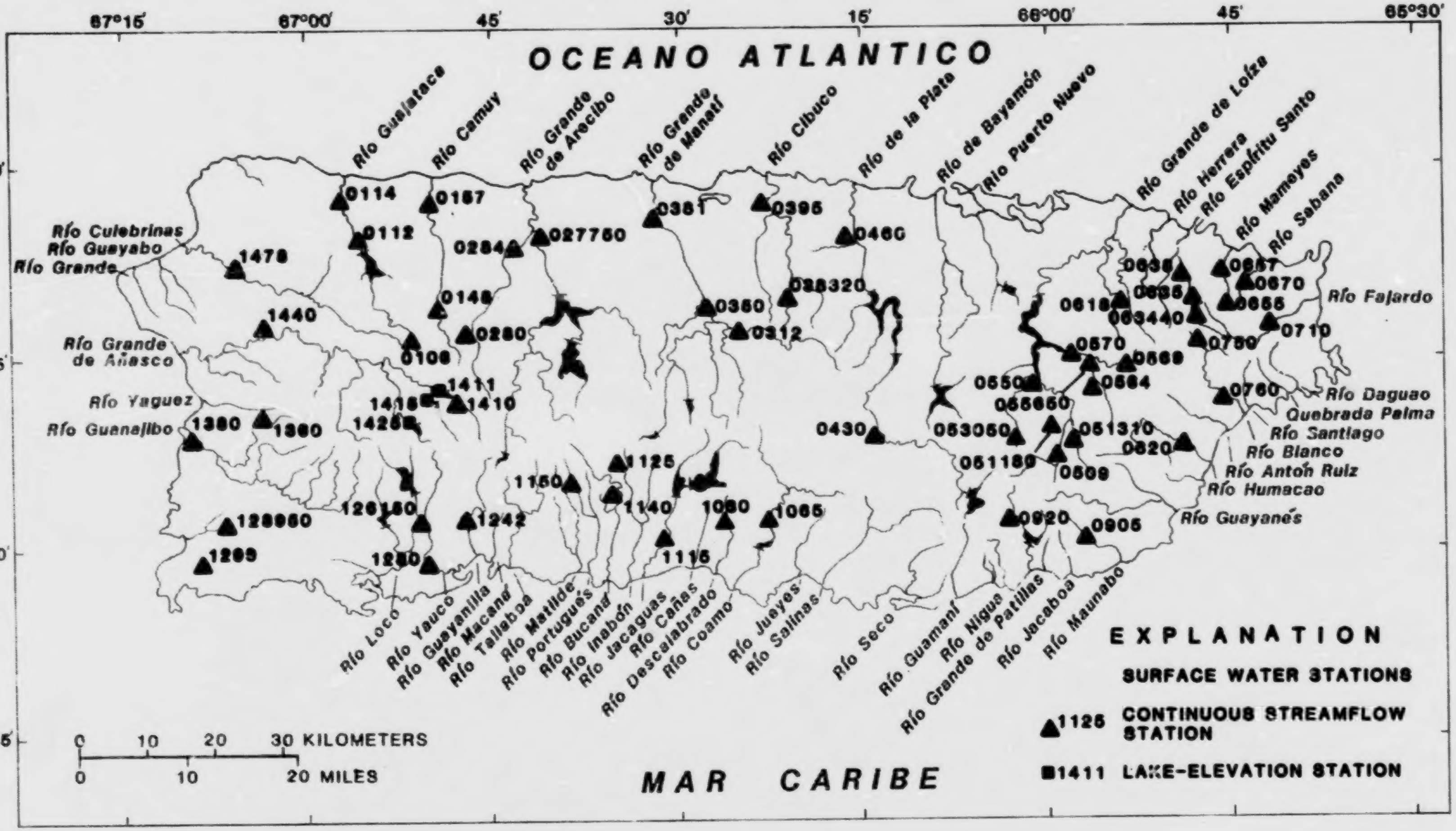
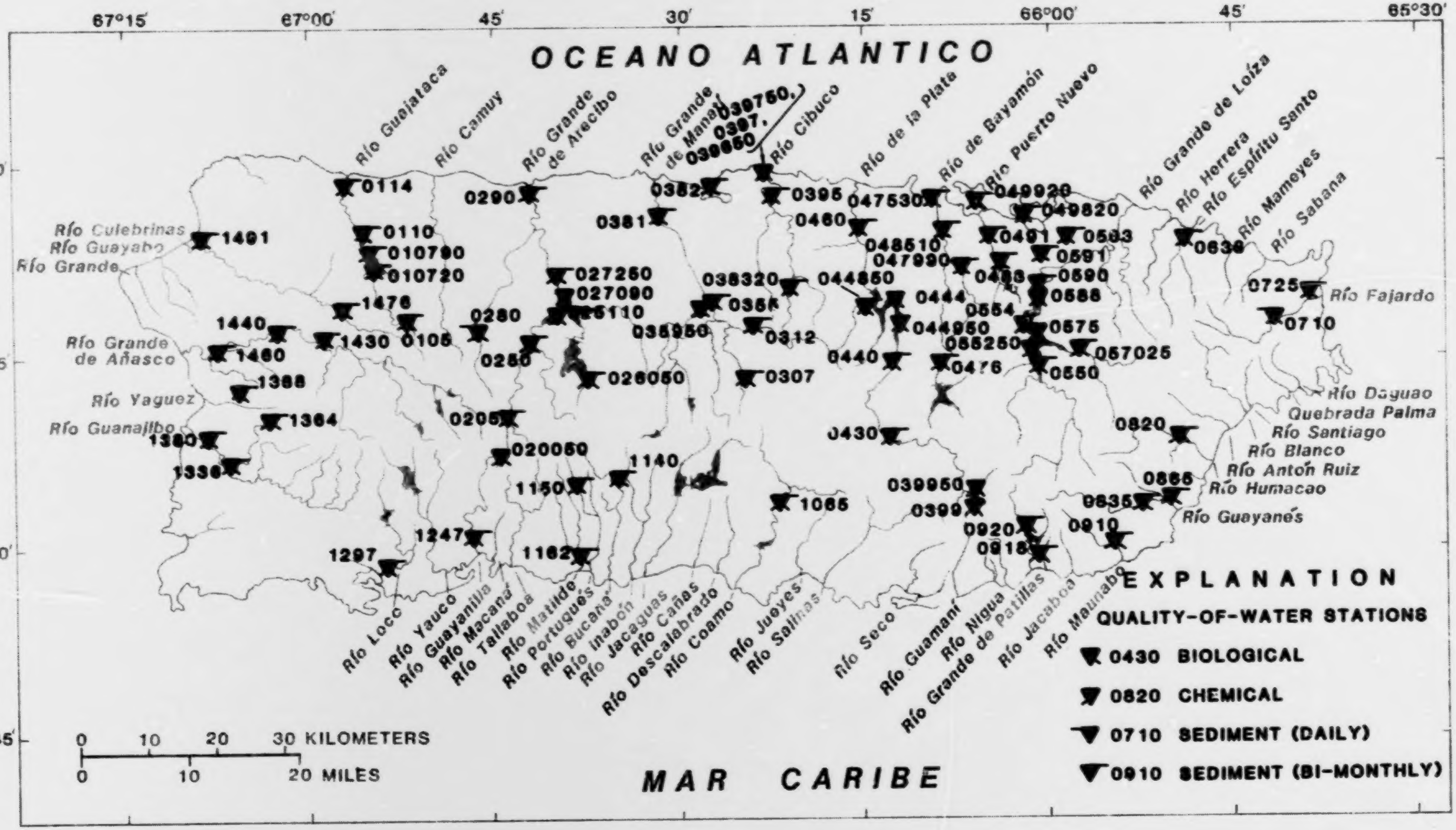
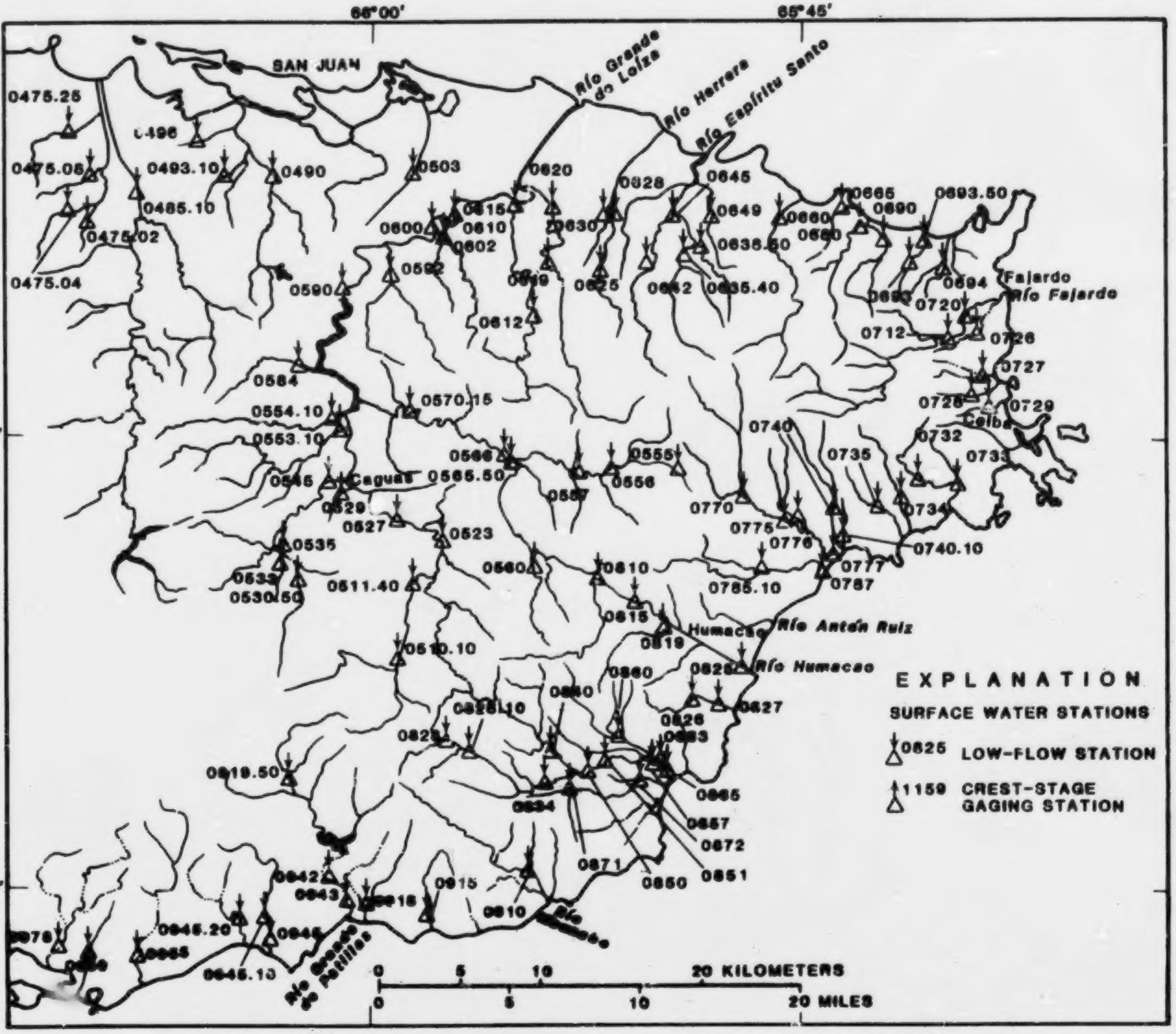

67°15'
67°00'
45'
30'
15'
66°00'
45'
65°30'
18°30'
15'
18°00'
17°45'
OCEANO ATLANTICO
MAR CARIBE
Río Guajataca
Río Camuy
Río Grande de Arecibo
Río Grande de Manatí
Río Cibuco
Río de la Plata
Río de Bayamón
Río Puerto Nuevo
Río Grande de Loíza
Río Herrera
Río Espíritu Santo
Río Mameyes
Río Sabana
Río Fajardo
Río Daguao
Quebrada Palma
Río Santiago
Río Blanco
Río Antón Ruiz
Río Humacao
Río Guayanés
Río Culebrinas
Río Guayabo
Río Grande
Río Grande de Añasco
Río Yaguez
Río Guanajibo
Río Loco
Río Yauco
Río Guayanilla
Río Macaná
Río Tallaboa
Río Matilde
Río Portugués
Río Bucaná
Río Inabón
Río Jacaguas
Río Cañas
Río Descalabrado
Río Coamo
Río Jueyes
Río Salinas
Río Seco
Río Guamaní
Río Nigua
Río Grande de Patillas
Río Jacaboa
Río Maunabo
0114
0157
0112
0284
027750
0381
0395
0460
1478
0148
0350
038320
1440
0106
0280
0312
1411
1415
1410
1425
1380
1360
0430
1125
1150
1140
126150
1242
128950
1090
1065
1115
1289
1250
0636
0657
0670
0618
0635
0655
063440
0710
0750
0570
0569
0550
0564
055650
0760
053050
051310
0620
051150
0509
0920
0905
0 10 20 30 KILOMETERS
0 10 20 MILES
EXPLANATION
SURFACE WATER STATIONS
1125 CONTINUOUS STREAMFLOW STATION
1411 LAKE-ELEVATION STATION

Figure 6.--Location of continuous surface-water stations in Puerto Rico.



67°15′
67°00′
45′
30′
15′
66°00′
45′
65°30′
18°30′
15
18°00′
17°45′
OCEANO ATLANTICO
MAR CARIBE
Río Guajataca
Río Camuy
Río Grande de Arecibo
Río Grande de Manatí
039750,
0397,
039650
Río Cibuco
Río de la Plata
Río de Bayamón
Río Puerto Nuevo
Río Grande de Loíza
Río Herrera
Río Espíritu Santo
Río Mameyes
Río Sabana
Río Culebrinas
Río Guayabo
Río Grande
Río Grande de Añasco
Río Yaguez
Río Guanajibo
Río Fajardo
Río Daguao
Quebrada Palma
Río Santiago
Río Blanco
Río Antón Ruiz
Río Humacao
Río Guayanés
Río Loco
Río Yauco
Río Guayanilla
Río Macaná
Río Tallaboa
Río Matilde
Río Portugués
Río Bucaná
Río Inabón
Río Jacaguas
Río Cañas
Río Descalabrado
Río Coamo
Río Jueyes
Río Salinas
Río Seco
Río Guamaní
Río Nigua
Río Grande de Patillas
Río Jacaboa
Río Maunabo
0114
0290
0382
0395
047530
049920
049820
1491
0110
010790
010720
0381
0460
048510
0491
0583
0591
0636
047990
0493
0590
027250
027090
025110
038320
044850
0588
0725
1476
0280
0355
0444
0554
0710
1440
1430
0105
035950
0312
044950
0575
1460
0250
055250
057025
0440
0476
0550
1388
026050
0307
1364
0205
0430
0820
1380
020050
1140
1336
039950
0866
1150
1065
0399
0835
0920
0910
1247
0918
1297
1162
0 10 20 30 KILOMETERS
0 10 20 MILES
EXPLANATION
QUALITY-OF-WATER STATIONS
0430 BIOLOGICAL
0820 CHEMICAL
0710 SEDIMENT (DAILY)
0910 SEDIMENT (BI-MONTHLY)

Figure 7.--Location of water-quality stations in Puerto Rico.


66°00'
65°45'
18°15'
18°00'
SAN JUAN
Río Grande de Loíza
Río Herrera
Río Espíritu Santo
Fajardo
Río Fajardo
Ceiba
Caguas
Humacao
Río Antón Ruiz
Río Humacao
Río Grande de Patillas
0475.25
0496
0475.06
0493.10
0490
0485.10
0475.02
0475.04
0503
0620
0615
0610
0600
0602
0630
0592
0590
0612
0584
0570.15
0554.10
0553.10
0545
0529
0527
0566
0565.50
0557
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0555
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0535
0532
0530.50
0511.40
0560
0510.10
0628
0645
0649
0638.50
0625
0635.40
0665
0660
0690
0693.50
0694
0720
0712
0726
0727
0728
0729
0732
0733
0735
0740
0734
0740.10
0770
0775
0776
0777
0787
0785.10
0810
0815
0819
0825
0826
0827
0860
0850
0851
0857
0865
0871
0872
0834
0829
0919.50
0942
0943
0945
0945.20
0945.13
0965
0975
0915
0918
0910
0 5 10 20 KILOMETERS
0 5 10 20 MILES
EXPLANATION
SURFACE WATER STATIONS
0825 LOW-FLOW STATION
1159 CREST-STAGE GAGING STATION

Figure 8.--Location of low-flow partial-record stations in Eastern Puerto Rico.

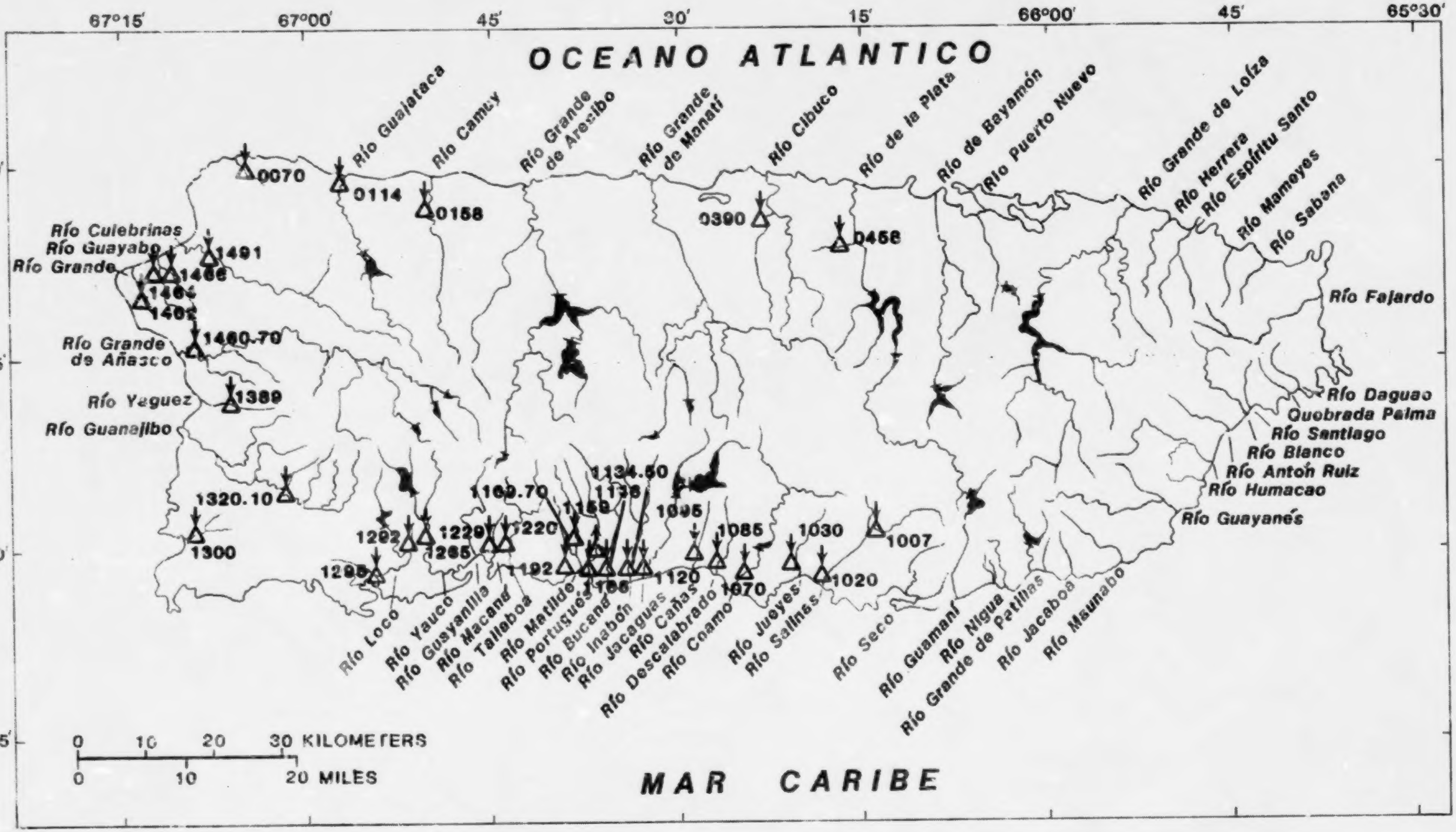
67°15'
67°00'
45'
30'
15'
66°00'
45'
65°30'
18°30'
15'
18°00'
17°45'
OCEANO ATLANTICO
MAR CARIBE
Río Guajataca
Río Camuy
Río Grande de Arecibo
Río Grande de Manatí
Río Cibuco
Río de la Plata
Río de Bayamón
Río Puerto Nuevo
Río Grande de Loíza
Río Herrera
Río Espíritu Santo
Río Mameyes
Río Sabana
Río Fajardo
Río Daguao
Quebrada Palma
Río Santiago
Río Blanco
Río Antón Ruiz
Río Humacao
Río Guayanés
Río Culebrinas
Río Guayabo
Río Grande
Río Grande de Añasco
Río Yaguez
Río Guanajibo
Río Loco
Río Yauco
Río Guayanilla
Río Macaná
Río Tallaboa
Río Matilde
Río Portugués
Río Bucaná
Río Inabón
Río Jacaguas
Río Cañas
Río Descalabrado
Río Coamo
Río Jueyes
Río Salinas
Río Seco
Río Guamaní
Río Nigua
Río Grande de Patillas
Río Jacaboa
Río Maunabo
0070
0114
0158
0390
0458
1491
1466
1464
1462
1460.70
1389
1320.10
1300
1292
1295
1229
1265
1220
1169.70
1192
1159
1134.50
1136
1166
1120
1095
1085
1070
1030
1020
1007
0 10 20 30 KILOMETERS
0 10 20 MILES

Figure 9.--Location of low-flow partial-record stations in Central and Western Puerto Rico.

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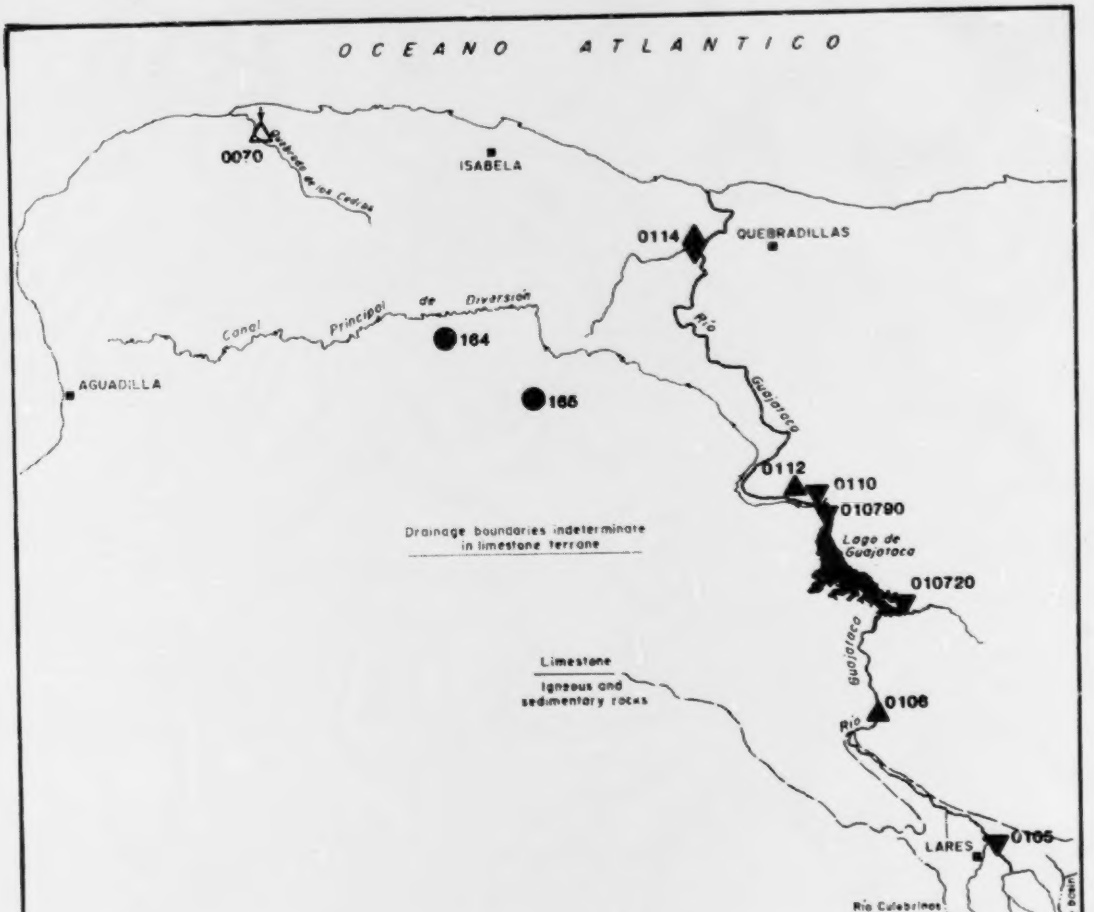
OCEANO ATLANTICO
0070
Quebrada de los Cedros
ISABELA
0114
QUEBRADILLAS
Canal Principal de Diversion
164
165
AGUADILLA
Río Guajataca
0112
0110
010790
Lago de Guajataca
Drainage boundaries indeterminate in limestone terrane
010720
Limestone
Igneous and sedimentary rocks
0106
Río Guajataca
0105
LARES
Río Culebrinas basin
Río Grande de Añasco basin
Río Camuy basin
EXPLANATION
▲ 0106 SURFACE-WATER STATION AND NUMBER
▼ 0105 QUALITY-OF-WATER STATION AND NUMBER
● 164 WELL AND WELL NUMBER
Map area
0 1 2 3 4 5 6 7 KILOMETERS
0 1 2 3 4 5 MILES

Figure 10.--Río Guajataca basin.

RIO GUAJATACA BASIN

50010500 RIO GUAJATACA AT LARES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°18'01", long 66°52'24", at bridge on Highway 111 (km 32.9), 0.1 mi (0.2 km) upstream from Quebrada Anón, and 0.4 mi (0.6 km) northeast of Lares plaza.

DRAINAGE AREA.--3.16 sq mi (8.18 sq km).

PERIOD OF RECORD.--Water years 1958-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
28...	1140	10	214	8.0	23.0	2.2	8.9	95	16	K6900	6100
DEC											
23...	1110	4.0	224	7.6	21.5	85	9.3	105	15	41000	7700
FEB , 1984											
08...	0740	2.3	226	7.5	19.5	1.3	7.1	80	15	K16000	3800
APR											
18...	1640	.45	276	8.3	26.0	1.1	9.1	116	12	3400	560
JUN											
21...	1110	12	218	8.1	23.0	11	8.4	101	<10	3000	2500
AUG											
16...	1345	11	228	8.0	24.5	1.0	7.3	97	13	21000	5300

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
28...	79	0	23	5.1	11	.6	2.1	80	6.0	10	<.10
DEC											
23...	--	--	--	--	--	--	--	85	--	--	--
FEB , 1984											
08...	--	--	--	--	--	--	--	90	--	--	--
APR											
18...	100	0	29	6.6	14	.6	1.8	105	15	10	.30
JUN											
21...	--	--	--	--	--	--	--	79	--	--	--
AUG											
16...	84	2	26	4.6	8.8	.4	2.7	82	13	10	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
28...	23	130	2.6	3	2.1	.03	2.1	.17	.63	.80	2.9
DEC											
23...	--	--	--	68	1.7	.02	1.7	.16	.84	1.0	2.7
FEB , 1984											
08...	--	--	--	6	.97	.03	1.0	<.01	--	.60	1.6
APR											
18...	27	170	.21	4	--	<.01	.20	.03	.77	.80	1.0
JUN											
21...	--	--	--	12	--	<.01	1.9	.01	--	<.10	--
AUG											
16...	23	140	4.2	22	--	<.01	1.9	<.01	--	.10	2.0

K = non-ideal count

RIO GUAJATACA BASIN

50010500 RIO GUAJATACA AT LARES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
OCT , 1983										
28...	13	.05	1	100	1	<1	3	<.1	<1	<1
DEC										
23...	12	.07	--	--	--	--	--	--	--	--
FEB , 1984										
08...	7.1	.10	--	--	--	--	--	--	--	--
APR										
18...	4.4	.05	2	<100	1	<1	<1	.1	<1	<1
JUN										
21...	--	.06	--	--	--	--	--	--	--	--
AUG										
16...	8.9	.11	--	--	--	--	--	--	--	--

RIO GUAJATACA BASIN

50010600 RIO GUAJATACA ABOVE LAGO DE GUAJATACA, PR

LOCATION.--Lat 18°19'57", long 66°55'29", Hydrologic Unit 21010002, 125 ft (38.1 m) off road 451, 3 mi (4.8 km) south of Lago de Guajataca, 1.0 mi (1.6 km) east of Eneas and 2.0 mi (3.2 km) west of Piletas.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to September, 1984.

GAGE.--Water-stage recorder.

REMARKS.--Records fair.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 1,500 cu ft/s (42.5 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Aug. 15	1600	1,700	48.1	10.41	3.173	Sept. 15	1445	1,670	47.3	10.35	3.155
Sept. 13	1645	*1,910	54.1	10.82	3.298						

Minimum discharge, 7.1 cu ft/s (0.201 cu m/s) Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										25	9.0	82
2										18	9.3	58
3										16	8.2	100
4										60	20	73
5										200	10	65
6										35	9.0	56
7										25	7.5	36
8										22	48	28
9										20	18	24
10										100	9.7	21
11										70	13	156
12										46	14	71
13										28	103	292
14										22	193	204
15										21	322	357
16										18	102	195
17										16	51	263
18										16	54	163
19										22	31	90
20										17	26	94
21										15	19	61
22										15	32	48
23										15	24	73
24										12	18	47
25										12	16	38
26										12	107	52
27										10	80	47
28										18	39	65
29										15	25	63
30										11	20	46
31										9.2	64	---
TOTAL										941.2	1481.7	2970
MEAN										30.4	47.8	99.0
MAX										200	322	357
MIN										9.2	7.5	21
AC-FT										1870	2940	5890

WATER QUALITY RECORDS

PERIOD OF RECORD.--AUGUST TO SEPTEMBER 1984

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
AUG, 03	1328	9.3	318	25.5					

RIO GUAJATACA BASIN

50011000 CANAL PRINCIPAL DE DIVERSIONES AT LAGO DE GUAJATACA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'02", long 66°55'27", off Highway 476 at Lago Guajataca outlet, 3.0 mi (4.8 km) southwest of Segunda Unidad Baldorioty de Castro, and 5.3 mi (8.5 km) south of Quebradillas Plaza.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1958-64, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983 31...	1420	50	308	7.3	26.0	11	6.6	83	30	54	56
DEC 23...	1235	65	386	7.5	26.0	1.1	8.2	103	25	K65	72
FEB , 1984 10...	0840	58	273	7.8	25.0	1.1	7.8	96	<10	K109	K180
MAY 11...	1435	60	283	8.4	28.0	1.1	9.2	119	<10	K1	K1
JUL 05...	1650	60	333	7.6	25.0	1.9	2.0	25	<10	82	K170
AUG 20...	1415	45	310	7.7	26.0	.80	3.0	38	<10	K120	160

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983 31...	150	8	53	3.4	5.3	.2	1.6	139	10	7.6	.20
DEC 23...	--	--	--	--	--	--	--	180	--	--	--
FEB , 1984 10...	--	--	--	--	--	--	--	125	--	--	--
MAY 11...	130	9	46	4.2	6.5	.3	1.6	127	13	9.6	.20
JUL 05...	--	--	--	--	--	--	--	139	--	--	--
AUG 20...	140	4	49	3.3	5.7	.2	1.7	136	15	9.1	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983 31...	6.4	170	23	10	.02	<.10	.32	3.1	3.4	--
DEC 23...	--	--	--	1	<.01	.60	<.01	--	.50	1.1
FEB , 1984 10...	--	--	--	8	<.01	<.10	<.01	--	.60	--
MAY 11...	6.8	160	26	4	<.01	<.10	.27	2.2	2.5	--
JUL 05...	--	--	--	1	<.01	.40	<.01	--	.30	.70
AUG 20...	7.0	170	21	4	<.01	<.10	.17	.23	.40	--

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RIO GUAJATACA BASIN

50011000 CANAL PRINCIPAL DE DIVERSIONES AT LAGO DE GUAJATACA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
31...	--	.01	1	<100	1	<1	3	<.1	<1	<1
DEC										
23...	6.9	.02	--	--	--	--	--	--	--	--
FEB , 1984										
10...	--	.05	--	--	--	--	--	--	--	--
MAY										
11...	--	<.01	2	<100	2	<1	<1	.1	<1	<1
JUL										
05...	3.1	.01	--	--	--	--	--	--	--	--
AUG										
20...	--	<.01	--	--	--	--	--	--	--	--

K = non-ideal count

RIO GUAJATACA BASIN

50011200 RIO GUAJATACA BELOW LAGO GUAJATACA, PR

LOCATION.--Lat 18°24'01", long 66°55'40", Hydrologic Unit 21010002, on left bank, 250 ft (76.2 m) downstream from bridge on Highway 476, 1,000 ft (305 m) downstream from outlet tunnel, and 5.2 mi (8.4 km) southeast of Quebradillas.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1969 to December 1970, April to September 1984.

GAGE.--Water-stage recorder. Altitude of gage is 535 ft (163 m), from topographic map.

REMARKS.--Records fair. Flow regulated by Lago Guajataca Dam. Low flows are from seepage through and under dam and nearby springs.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 590 cu ft/s (16.7 cu m/s) Sept. 18, 1984, gage height, 9.94 ft (3.030 m), from rating curve extended above 400 cu ft/s (11.3 cu m/s) on basis of step-backwater analysis; minimum, 0.53 cu ft/s (0.015 cu m/s) May 31, June 1, 1984.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 590 cu ft/s (16.7 cu m/s) Sept. 18; minimum, 0.53 cu ft/s (0.015 cu m/s) May 31, June 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	.97	.77	1.3	1.6	1.2
2							---	.99	1.1	1.6	1.3	1.0
3							---	.97	.94	1.3	5.5	.94
4							---	.88	1.1	1.1	1.1	.90
5							---	.88	1.1	2.2	1.1	1.6
6							---	.91	1.2	1.5	1.0	.94
7							---	.91	1.3	1.2	1.0	.95
8							---	.92	1.2	1.3	1.0	.91
9							---	.92	1.0	1.6	1.1	.87
10							---	.92	1.2	1.2	4.7	.88
11							---	.91	1.4	1.3	.90	1.3
12							---	.91	.98	.99	1.9	1.6
13							---	.89	2.5	1.1	3.1	1.3
14							---	.85	1.7	.90	1.3	1.5
15							---	.82	1.3	1.1	1.0	2.3
16							---	.86	1.2	1.4	.94	2.1
17							---	1.1	1.4	1.1	.92	8.2
18							---	1.8	1.9	1.1	.94	171
19							---	1.1	4.2	1.0	.98	492
20							---	1.2	1.9	1.0	.94	438
21							---	1.8	1.5	.86	.92	400
22							---	2.0	1.5	1.0	.96	385
23							---	1.6	1.3	1.3	.90	385
24							---	1.3	1.5	2.0	1.1	235
25							.95	1.3	1.7	1.7	1.0	2.0
26							.95	1.5	1.5	1.7	.94	2.6
27							.92	1.8	1.4	1.3	.90	2.1
28							.92	1.3	1.4	.95	.90	2.2
29							.91	1.3	1.4	1.2	1.0	40
30							.94	1.3	1.1	1.5	.92	2.4
31							---	.79	---	1.2	.90	---
TOTAL							---	35.70	43.69	40.00	42.76	2585.79
MEAN							---	1.15	1.46	1.29	1.38	86.2
MAX							---	2.0	4.2	2.2	5.5	492
MIN							---	.79	.77	.86	.90	.87
AC-FT							---	71	87	79	85	5130

WATER QUALITY RECORDS

PERIOD OF RECORD.--APRIL TO SEPTEMBER 1984

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
APR, 25	1535	0.9	346	26.0	AUG, 08	1045	1.0	390	27.5
MAY, 30	1232	1.2	401	27.0					

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RIO GUAJATACA BASIN

50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR

LOCATION.--Lat 18°28'31", long 66°57'46", Hydrologic Unit 21010002, on left bank at ford 1.7 mi (2.7 km) upstream from bridge on Highway 2, 1.6 mi (2.6 km) west of Quebradillas plaza, 2.1 mi (3.4 km) upstream from the Atlantic Ocean, and 6.6 mi (10.6 km) downstream from Lago de Guajataca.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to May 1969 (monthly measurements only), July 1969 to December 1970, April to September 1984.

GAGE.--Water-stage recorder. Altitude of gage is at mean level from topographic map.

REMARKS.--Records fair. Flow regulated by Lago de Guajataca 6.6 mi (10.6 km).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,090 cu ft/s (87.5 cu m/s) Sept. 19, 1984; minimum discharge, 6.2 cu ft/s (0.176 cu m/sec) Sept. 4, 9-12, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 cu ft/s (28.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 19	0300	*3,090	87.5	8.10	2.469

Minimum discharge, 6.2 cu ft/s (0.176 cu m/s) Sept. 4, 9-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	7.1	6.8	8.4	7.6	6.8
2							---	7.3	7.8	8.6	8.4	6.6
3							---	7.3	8.2	9.1	8.2	6.5
4							---	7.3	8.1	9.7	8.8	6.6
5							---	7.4	11	86	8.2	6.6
6							---	7.7	19	27	8.1	6.4
7							---	7.7	14	12	8.1	6.9
8							---	7.5	14	9.9	8.0	6.6
9							---	7.7	12	9.6	7.8	6.4
10							---	7.7	12	9.1	7.8	6.3
11							---	7.8	10	9.7	8.0	6.2
12							---	7.7	9.3	8.6	7.8	9.0
13							---	7.4	8.9	8.3	7.6	8.1
14							---	7.4	30	8.2	9.2	7.9
15							---	7.4	12	8.2	9.2	29
16							---	7.4	10	8.6	8.7	52
17							---	7.5	11	8.5	8.1	170
18							---	18	75	8.2	8.2	580
19							---	16	145	8.0	9.0	1900
20							---	22	21	7.7	8.7	500
21							---	99	10	7.1	8.5	199
22							---	57	9.8	6.9	8.8	96
23							---	14	9.7	7.3	8.4	129
24							8.4	9.8	10	7.7	8.7	90
25							8.5	8.9	9.5	9.0	8.2	20
26							8.5	19	9.1	8.3	7.9	30
27							8.6	31	9.1	8.3	7.7	20
28							8.6	11	8.9	7.3	7.4	25
29							8.9	11	8.6	7.3	7.1	70
30							14	9.2	8.7	7.1	7.2	25
31							---	8.3	---	7.5	7.0	---
TOTAL							---	461.5	538.5	357.2	252.4	4031.9
MEAN							---	14.9	18.0	11.5	8.14	134
MAX							---	99	145	86	9.2	1900
MIN							---	7.1	6.8	6.9	7.0	6.2
AC-FT							---	915	1070	709	501	8000

RIO GUAJATACA BASIN

50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983 31...	1225	13	484	7.5	25.0	1.2	7.2	87	30	K150	250
DEC 28...	1030	3.9	480	7.3	24.5	3.4	6.9	82	19	56	140
MAR , 1984 09...	1040	8.4	600	7.9	24.0	.80	12.6	149	<10	K18	52
MAY 11...	1220	7.6	550	8.2	27.0	<1.0	9.9	123	<10	K30	K2
JUL 05...	1355	124	354	8.3	24.5	27	7.7	92	<10	K1100	3500
AUG 20...	1930	9.5	559	8.0	26.0	.50	10.4	128	<10	74	K140

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983 31...	220	18	77	7.3	15	.5	1.1	207	8.6	27	.10
DEC 28...	--	--	--	--	--	--	--	208	--	--	--
MAR , 1984 09...	--	--	--	--	--	--	--	228	--	--	--
MAY 11...	240	41	80	10	22	.6	1.0	226	7.3	41	.10
JUL 05...	--	--	--	--	--	--	--	154	--	--	--
AUG 20...	220	0	73	9.1	20	.6	1.2	258	9.6	38	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983 31...	6.4	270	9.4	4	2.0	.02	2.0	.27	.23	.50	2.5
DEC 28...	--	--	--	<1	2.1	.03	2.1	.06	.64	.70	2.8
MAR , 1984 09...	--	--	--	5	--	<.01	2.4	<.01	--	1.0	3.4
MAY 11...	6.6	290	6.0	1	--	<.01	2.1	.34	1.8	2.1	4.2
JUL 05...	--	--	--	34	--	<.01	.70	<.01	--	.80	1.5
AUG 20...	6.4	310	7.1	1	--	<.01	1.8	<.01	--	.10	1.9

K = non-ideal count

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RIO GUAJATACA BASIN

50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
31...	11	<.01	1	<100	1	21	2	<.1	<1	<1
DEC										
28...	12	.02	--	--	--	--	--	--	--	--
MAR , 1984										
09...	15	<.01	--	--	--	--	--	--	--	--
MAY										
11...	19	<.01	1	<100	2	3	<1	.1	<1	<1
JUL										
05...	6.5	.02	--	--	--	--	--	--	--	--
AUG										
20...	5.4	<.01	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
JUN, 19	0851	94	263	26.5	APR, 24	1320	8.8	550	25.5

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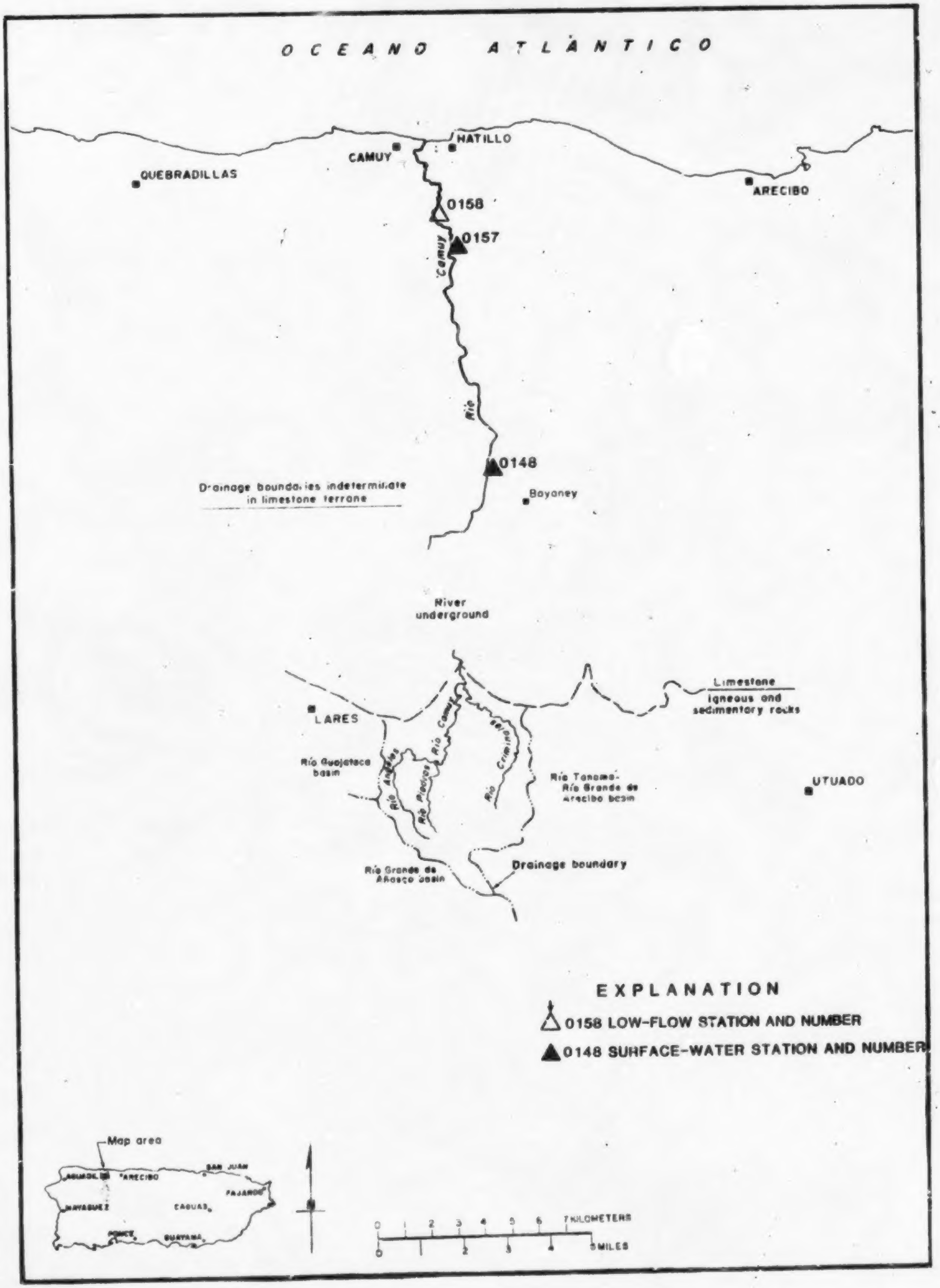
OCEANO ATLANTICO
HATILLO
CAMUY
QUEBRADILLAS
ARECIBO
0158
0157
Río Camuy
0148
Drainage boundaries indeterminate in limestone terrane
Bayaney
River underground
LARES
Limestone
Igneous and sedimentary rocks
Río Guajataca basin
Río Angeles
Río Piedras
Río Camuy
Río Criminales
Río Tanama-Río Grande de Arecibo basin
UTUADO
Río Grande de Añasco basin
Drainage boundary
EXPLANATION
0158 LOW-FLOW STATION AND NUMBER
0148 SURFACE-WATER STATION AND NUMBER
Map area
AGUADILLA
ARECIBO
SAN JUAN
FAJARDO
MAYAGUEZ
CAGUAS
PONCE
GUAYAMA
0 1 2 3 4 5 6 7 KILOMETERS
0 1 2 3 4 5 MILES

Figure 11.--Río Camuy basin.

RIO CAMUY BASIN

50014800 RIO CAMUY NEAR BAYANEY, PR

LOCATION.--Lat 18°23'48", long 66°49'04", Hydrologic Unit 21010002, on left bank at Highway 488, 1.4 mi (2.2 km) southeast of school at Santiago, 0.9 mi (1.4 km) northwest from Escuela Manuel A. Rivera at Bayaney and 9.1 mi (14.6 km) upstream from Atlantic Ocean.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to September, 1984.

GAGE.--Water-stage recorder. Altitude of gage is 330 ft (100 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 1,000 cu ft/s (28.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
June 21	2045	1,400	39.6	9.82	2.993	Sept. 15	1815	1,100	31.2	8.92	2.719
Sept. 4	2000	1,380	39.1	9.77	2.978	Sept. 18	2315	*2,040	57.8	11.53	3.514
Sept. 13	1945	1,800	51.0	10.93	3.331						

Minimum discharge, 38 cu ft/s (1.076 cu m/s), Aug. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	64	57	42	89
2								---	55	55	42	78
3								---	53	53	41	121
4								---	130	54	42	336
5								---	220	111	45	295
6								---	79	87	42	195
7								---	67	65	41	97
8								---	61	55	40	93
9								---	59	52	43	94
10								---	105	52	39	75
11								---	75	77	38	216
12								---	64	102	52	265
13								---	58	70	62	504
14								---	55	56	84	456
15								---	56	55	281	346
16								---	52	52	159	490
17								---	51	50	75	793
18								---	88	49	57	822
19								---	250	55	56	450
20								---	115	72	79	300
21								---	300	53	52	200
22								---	256	50	52	160
23								236	130	55	49	170
24								149	86	49	46	220
25								193	124	47	44	130
26								114	112	46	49	130
27								162	79	45	117	210
28								128	73	45	79	140
29								81	66	52	55	270
30								76	51	45	50	230
31								62	---	44	50	---
TOTAL								---	3044	1810	2003	8176
MEAN								---	101	58.4	64.6	273
MAX								---	300	111	281	822
MIN								---	51	44	38	75
AC-FT								---	6040	3590	3970	16220

WATER QUALITY RECORDS

PERIOD OF RECORD.--JUNE TO SEPTEMBER 1984

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
JUN, 13	1320	59	290	27.5	SEP, 05	1152	194	322	24.0
AUG, 15	1129	153	306	24.0					

RIO CAMUY BASIN

50015700 RIO CAMUY NEAR HATILLO, PR

LOCATION.--Lat 18°27'44", long 66°49'56", Hydrologic Unit 21010002, 1.8 mi (2.90 km) southwest of Hatillo plaza, and 1.8 mi (2.9 km) southeast of Camuy plaza, 1.2 mi (1.9 km) south of Planta de Purificación, and 3.3 mi (5.5 km) upstream from Atlantic Ocean.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June to September 1984.

GAGE.--Water-stage recorder. Altitude of gage is 15 ft (5.0 km), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 1,800 cu ft/s (51.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
June 21	2315	1,810	51.2	13.16	4.011	Sept. 19	unknown	*3,000	85	Unknown	
Sept. 13	Unknown	2,200	62	Unknown							

Minimum discharge, 42 cu ft/s (1.19 cu m/s) July 10, Aug. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	63	52	100
2									---	60	52	90
3									---	56	51	130
4									---	58	51	400
5									---	119	56	350
6									---	117	51	203
7									---	78	51	122
8									---	62	49	90
9									---	56	53	119
10									---	54	52	83
11									---	76	50	186
12									---	122	61	380
13									---	80	69	700
14									---	63	70	400
15									---	60	350	300
16									---	56	258	500
17									---	55	83	1000
18									---	54	61	1100
19									294	52	50	600
20									163	84	84	361
21									273	61	52	263
22									465	56	50	193
23									169	62	56	200
24									105	55	54	267
25									115	53	52	156
26									155	52	50	160
27									89	52	150	253
28									81	52	80	164
29									73	61	60	326
30									68	53	50	278
31									---	52	50	---
TOTAL									---	2034	2358	9474
MEAN									---	65.6	76.1	316
MAX									---	122	350	1100
MIN									---	52	49	83
AC-FT									---	4030	4680	18790

WATER QUALITY RECORDS

PERIOD OF RECORD.--AUGUST TO SEPTEMBER 1984

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
AUG, 14	1416	56	311	25.5	SEP, 07	0626	126	336	24.5

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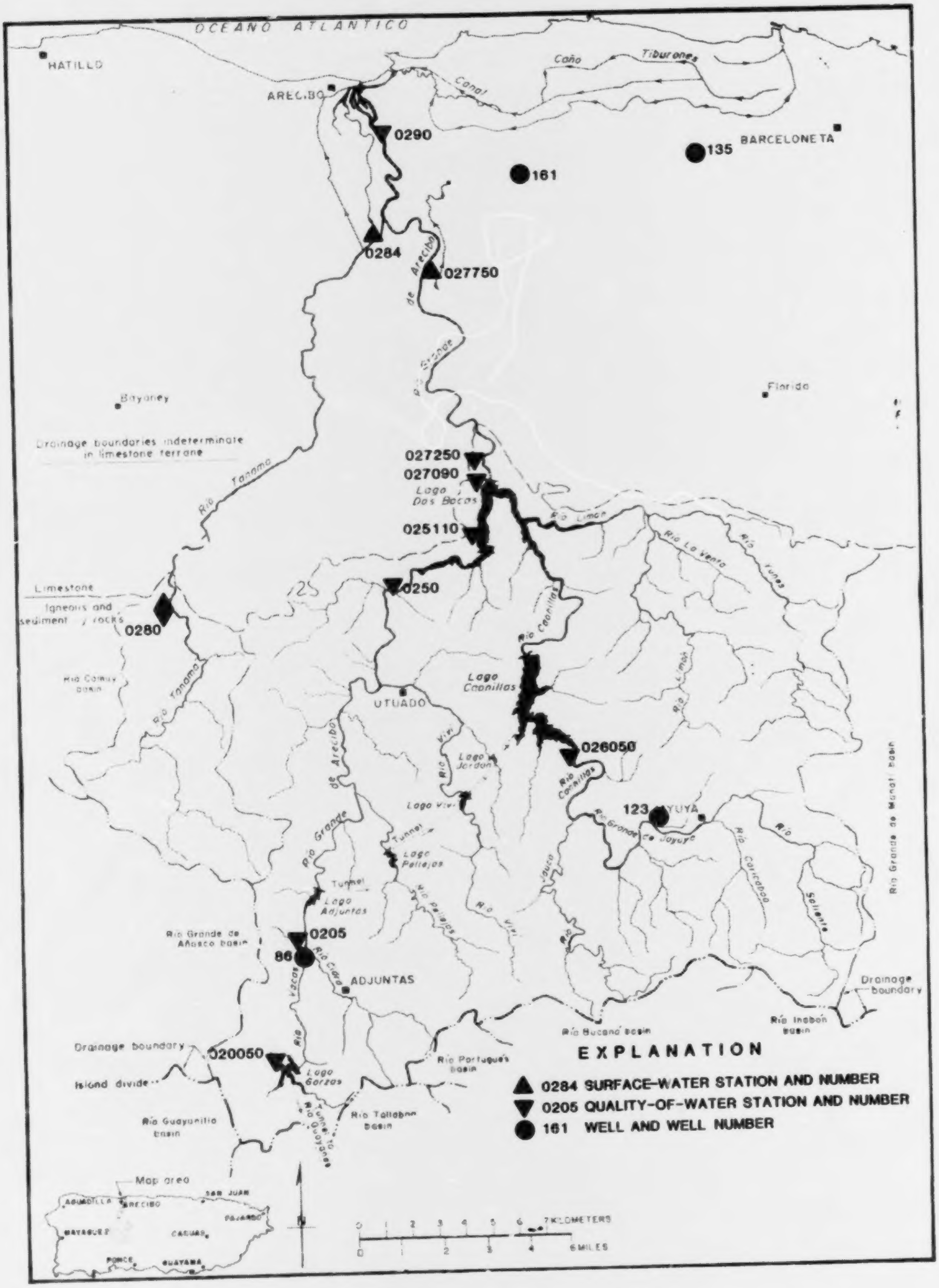
OCEANO ATLANTICO
HATILLO
ARECIBO
Caño Tiburones
Canal
BARCELONETA
0290
135
161
0284
027750
Río Grande de Arecibo
Florida
Bayaney
Drainage boundaries indeterminate in limestone terrane
Río Tanamá
027250
027090
Lago Dos Bocas
025110
Río Limón
Río La Venta
Río Yunes
Limestone
Igneous and sediment rocks
0250
0280
Río Caonillas
Río Camuy basin
Lago Caonillas
UTUADO
Río Grande de Manatí basin
026050
Lago Jordan
Río Viví
Lago Viví
JAYUYA
123
Río Grande de Jayuya
Río Caricaboa
Río Saliente
Tunnel
Lago Pellejas
Río Pellejas
Tunnel
Lago Adjuntas
Río Grande de Añasco basin
0205
86
Río Cidra
ADJUNTAS
Río Vacas
Drainage boundary
Río Bucaná basin
Río Inabón basin
Drainage boundary
020050
Lago Garzas
Island divide
Río Portugués basin
Río Tallaboa basin
Río Guayanilla basin
Tunnel to Río Guayanés
EXPLANATION
▲ 0284 SURFACE-WATER STATION AND NUMBER
▼ 0205 QUALITY-OF-WATER STATION AND NUMBER
● 161 WELL AND WELL NUMBER
Map area
AGUADILLA
ARECIBO
SAN JUAN
FAJARDO
MAYAGUEZ
CAGUAS
PONCE
GUAYAMA
N
0 1 2 3 4 5 6 7 KILOMETERS
0 1 2 3 4 6 MILES

Figure 12.--Río Grande de Arecibo basin.

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RIO GRANDE DE ARECIBO BASIN

50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°10'54", long 66°44'12", at Highway 135 bridge, 1.0 mi (1.6 km) upstream from Lago Adjuntas, and 1.5 mi (2.4 km) northwest of Adjuntas.

DRAINAGE AREA.--12.7 sq mi (32.9 sq km) this does not include 6.0 sq mi (15.6 sq km) above Lago Garzas.

PERIOD OF RECORD.--Water years 1969-74, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
26...	1515	23	500	7.9	27.0	13	7.0	93	44	5800	8600
DEC											
19...	1625	15	375	9.0	24.0	40	7.4	93	13	7300	2500
FEB , 1984											
07...	0730	11	317	7.6	18.5	1.3	8.0	90	<10	K12000	4700
APR											
17...	0945	6.8	452	8.3	22.5	1.2	8.9	108	17	2400	890
JUN											
20...	0845	17	286	8.1	22.0	60	8.5	102	10	K11000	4700
AUG											
15...	0930	10	390	8.0	24.5	2.3	8.1	102	<10	K12000	K18000

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
26...	110	6	28	9.8	51	2	2.5	104	10	81	<.10
DEC											
19...	--	--	--	--	--	--	--	116	--	--	--
FEB , 1984											
07...	--	--	--	--	--	--	--	115	--	--	--
APR											
17...	130	0	32	11	36	1	1.9	125	7.7	58	<.10
JUN											
20...	--	--	--	--	--	--	--	105	--	--	--
AUG											
15...	120	0	30	11	25	1	2.1	120	12	40	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
26...	29	270	17	24	1.3	.05	1.3	.45	5.6	6.0	7.3
DEC											
19...	--	--	--	4	.44	.06	.50	.25	.05	.30	.80
FEB , 1984											
07...	--	--	--	5	1.2	.12	1.3	.16	.64	.80	2.1
APR											
17...	29	250	4.6	6	.45	.05	.50	.06	.54	.60	1.1
JUN											
20...	--	--	--	155	.84	.06	.90	.14	.26	.40	1.3
AUG											
15...	29	220	5.9	11	.57	.13	.70	.35	.35	.70	1.4

K = non-ideal count

RIO GRANDE DE ARECIBO BASIN

50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984--Continued

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
26...	32	.20	1	<100	1	7	3	<.1	<1	<1
DEC										
19...	3.5	.22	--	--	--	--	--	--	--	--
FEB , 1984										
07...	9.3	.21	--	--	--	--	--	--	--	--
APR										
17...	6.9	.18	<1	<100	1	<1	<1	.1	<1	<1
JUN										
20...	5.9	.13	--	--	--	--	--	--	--	--
AUG										
15...	6.2	.25	--	--	--	--	--	--	--	--

RIO GRANDE DE ARECIBO BASIN

50025000 RIO GRANDE DE ARECIBO NEAR UTUADO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°18'11", long 66°41'59", at bridge near Highway 10 at km 56.4, 0.5 mi (0.8 km)) downstream from Río de Caguana, and 2.5 mi (4.0 km) north of Utuado plaza.

DRAINAGE AREA.--66.0 sq mi (170.9 sq km) this excludes 6.0 sq mi (15.5 sq km) upstream from Lago Garzas, which is a diversion to Río Guayanés in the Río Tallaboa basin.

PERIOD OF RECORD.--Water years 1959-74, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV , 1983											
02...	1100	97	253	8.0	27.0	75	7.5	95	32	3000	9100
DEC											
19...	1345	58	273	8.1	23.0	70	7.6	98	10	20000	2300
FEB , 1984											
07...	1030	26	265	8.0	21.5	3.9	9.0	103	<10	K120000	6300
APR											
16...	1330	18	317	8.3	32.5	3.0	6.5	91	<10	30000	2500
JUN											
19...	1520	134	183	8.1	26.5	200	7.6	0	23	K280000	K140000
AUG											
13...	1800	56	297	7.7	27.0	4.0	.5	6	280	K120000	K13000

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
NOV , 1983											
02...	94	10	25	7.7	13	.6	2.1	84	21	12	.10
DEC											
19...	--	--	--	--	--	--	--	89	--	--	--
FEB , 1984											
07...	--	--	--	--	--	--	--	89	--	--	--
APR											
16...	110	12	30	8.7	19	.8	2.6	100	32	16	.10
JUN											
19...	--	--	--	--	--	--	--	64	--	--	--
AUG											
13...	93	0	24	8.0	20	.9	3.0	98	34	23	.20

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
NOV , 1983											
02...	14	150	33	8	1.4	.05	1.4	.18	.42	.60	2.0
DEC											
19...	--	--	--	4	1.5	.04	1.5	<.01	--	.50	2.0
FEB , 1984											
07...	--	--	--	5	1.2	.06	1.3	.06	.84	.90	2.2
APR											
16...	29	200	9.5	22	.99	.21	1.2	.14	.66	.80	2.0
JUN											
19...	--	--	--	2250	.81	.09	.90	.21	.89	1.1	2.0
AUG											
13...	21	190	29	10500	.89	.11	1.0	1.7	3.3	5.0	6.0

K = non-ideal count

50025000 RIO GRANDE DE ARECIBO NEAR UTUADO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
NOV , 1983 02...	3.9	.19	1	100	<1	9	21	<.1	<1	1
DEC 19...	3.9	.25	--	--	--	--	--	--	--	--
FEB , 1984 07...	9.7	.19	--	--	--	--	--	--	--	--
APR 16...	8.9	.48	1	<100	1	2	2	<.1	<1	<1
JUN 19...	3.9	.25	--	--	--	--	--	--	--	--
AUG 13...	27	3.7	--	--	--	--	--	--	--	--

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RIO GRANDE DE ARECIBO BASIN

50026050 RIO CAONILLAS ABOVE LAGO CAONILLAS NEAR JAYUYA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°13'26", long 66°38'22", 300 ft (91.m) off Highway 531, 700 ft (213 m) upstream from Lago Caonillas, 3.3 mi (5.3 km) northwest of Jayuya plaza.

DRAINAGE AREA.--40.4 sq mi (104.6 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
26...	1130	89	153	7.9	24.5	16	7.8	97	14	2100	2100
DEC											
20...	0945	31	223	8.1	20.5	25	8.3	100	<10	K630	420
FEB , 1984											
07...	1250	28	206	8.8	23.0	2.1	9.6	113	12	K1100	K1100
APR											
17...	1760	15	250	8.8	30.0	13	7.4	101	12	370	950
JUN											
19...	0945	65	169	8.2	24.0	16	8.5	104	<10	4300	740
AUG											
14...	1930	43	215	8.0	27.0	200	7.7	99	23	K11000	4600

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
26...	67	6	17	5.9	10	.6	1.5	61	14	9.3	<.10
DEC											
20...	--	--	--	--	--	--	--	77	--	--	--
FEB , 1984											
07...	--	--	--	--	--	--	--	73	--	--	--
APR											
17...	87	3	23	7.3	13	.6	1.5	85	18	12	<.10
JUN											
19...	--	--	--	--	--	--	--	58	--	--	--
AUG											
14...	75	5	19	6.3	12	.6	1.7	71	18	12	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
26...	24	120	28	22	.98	.02	1.0	.13	2.9	3.0	4.0
DEC											
20...	--	--	--	4	--	<.01	.90	.02	.28	.30	1.2
FEB , 1984											
07...	--	--	--	18	--	<.01	.30	.22	.28	.50	.80
APR											
17...	23	150	6.1	26	.19	.01	.20	.04	.46	.50	.70
JUN											
19...	--	--	--	30	--	<.01	.40	<.01	--	<.10	--
AUG											
14...	21	130	15	467	.28	.02	.30	.03	.77	.80	1.1

K = non-ideal count

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RIO GRANDE DE ARECIBO BASIN

50026050 RIO CAONILLAS ABOVE LAGO CAONILLAS NEAR JAYUYA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
26...	13	.06	1	100	2	2	4	<.1	<1	<1
DEC										
20...	5.3	.09	--	--	--	--	--	--	--	--
FEB , 1984										
07...	3.5	.02	--	--	--	--	--	--	--	--
APR										
17...	3.1	.14	<1	<100	1	<1	1	<.1	<1	<1
JUN										
19...	--	.08	--	--	--	--	--	--	--	--
AUG										
14...	4.9	.25	--	--	--	--	--	--	--	--

RIO GRANDE DE ARECIBO BASIN

50027250 RIO GRANDE DE ARECIBO BELOW LAGO DOS BOCAS NEAR FLORIDA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'50", long 66°40'02", at pedestrian bridge, 0.7 mi (1.1 km) downstream from Lago Dos Bocas and 6.6 mi (10.6 km) west of Florida plaza.

DRAINAGE AREA.--169 sq mi (436 sq km) does not include 6.0 sq mi (15.6 sq km) above Lago Garzas.

PERIOD OF RECORD.--Water years 1970-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV , 1983 02...	1245	179	176	7.6	26.0	20	5.2	64	36	3100	2900
DEC 19...	1126	21	206	7.7	25.0	15	9.6	116	10	K21	K27
FEB , 1984 06...	1615	29	198	7.7	26.5	2.0	7.4	93	<10	78	42
APR 16...	1755	26	222	8.1	26.5	1.1	6.9	85	15	K100	K36
JUN 18...	1715	725	190	7.6	26.5	6.9	4.3	54	<10	440	4900
AUG 14...	1015	18	235	7.4	26.5	4.7	2.5	31	11	4500	4500

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
NOV , 1983 02...	66	7	17	5.6	9.9	.6	2.0	59	12	9.4	<.10
DEC 19...	--	--	--	--	--	--	--	73	--	--	--
FEB , 1984 06...	--	--	--	--	--	--	--	76	--	--	--
APR 16...	77	2	20	6.5	11	.6	1.9	75	16	11	<.10
JUN 18...	--	--	--	--	--	--	--	73	--	--	--
AUG 14...	82	0	22	6.5	10	.5	2.1	84	15	12	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
NOV , 1983 02...	14	110	51	12	.58	.02	.60	.20	1.3	1.5	2.1
DEC 19...	--	--	--	3	--	<.01	.70	<.01	--	.30	1.0
FEB , 1984 06...	--	--	--	4	.28	.02	.30	.08	.32	.40	.70
APR 16...	17	130	9.1	2	--	<.01	<.10	.05	.85	.90	--
JUN 18...	--	--	--	6	.18	.02	.20	.09	.01	.10	.30
AUG 14...	12	130	6.3	8	--	<.01	<.10	.34	.16	.50	--

K = non-ideal count

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50027250 RIO GRANDE DE ARECIBO BELOW LAGO DOS BOCAS NEAR FLORIDA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
NOV , 1983 02...	9.3	.02	1	<100	<1	25	3	<.1	<1	<1
DEC 19...	4.4	.23	--	--	--	--	--	--	--	--
FEB , 1984 06...	3.1	.03	--	--	--	--	--	--	--	--
APR 16...	--	.02	1	<100	1	<1	<1	.1	<1	<1
JUN 18...	1.3	.02	--	--	--	--	--	--	--	--
AUG 14...	--	.05	--	--	--	--	--	--	--	--

RIO GRANDE DE ARECIBO BASIN

50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR

LOCATION.--Lat 18°25'29", long 66°41'44", Hydrologic Unit 21010002, 0.8 mi (1.3 km) above Río Tanamá, 4.0 mi (6.4 km) south of Arecibo and 6.7 mi (10.8 km) above mouth, and 10.2 mi (16.4 km) below Lago Dos Bocas.

DRAINAGE AREA.--200 sq mi (520 sq km), approximately, of which an undetermined amount does not contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1982 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 30 ft (9.1 m), from topographic map.

REMARKS.--Records fair. Flow regulated by Lago Dos Bocas Dam 10.2 mi (16.4 km) upstream.

EXTREMES FOR WATER YEARS 1983-84.--Peak discharges above base of 4,300 cu ft/s (122 cu m/s) and maximums (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 13, 1982	0700	9,310	264	13.05	3.978
Apr. 21, 1983	1100	*7,730	219	11.95	3.642
Sept. 13, 1984	2400	*5,920	168	10.53	3.210

Minimum daily discharges, 46 cu ft/s (1.30 cu m/s) Apr. 13, 1983; 37 cu ft/s (1.05 cu m/s) May 15, 1984.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	317	790	367	66	530
2							---	261	640	385	59	855
3							---	522	220	125	49	153
4							---	458	720	46	44	90
5							---	163	580	45	51	141
6							---	125	270	590	356	86
7							---	221	950	1230	247	880
8							---	279	510	511	70	514
9							---	108	570	286	541	733
10							---	644	661	186	430	651
11							---	565	523	271	994	644
12							---	964	121	148	253	179
13							---	580	75	72	333	4510
14							---	1560	70	134	295	1760
15							---	848	65	350	133	971
16							---	202	60	238	328	1150
17							---	314	60	225	434	1640
18							---	172	58	204	216	1340
19							---	270	66	282	407	1160
20							---	424	135	533	418	644
21							---	550	200	531	81	816
22							---	300	112	245	55	498
23							---	350	60	102	299	119
24							---	710	55	236	340	143
25							---	390	118	142	90	213
26							---	410	86	162	350	136
27							---	230	127	620	332	254
28							---	500	141	592	282	365
29							150	522	255	579	424	684
30							333	133	618	299	344	251
31							---	590	---	89	377	---
TOTAL							---	13882	8916	9826	8698	22109
MEAN							---	448	297	317	281	737
MAX							---	1560	950	1230	994	4510
MIN							---	108	55	46	44	86
CFSM							---	2.24	1.49	1.59	1.41	3.69
IN.							---	2.58	1.66	1.83	1.62	4.11
AC-FT							---	27530	17690	19490	17250	43850

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50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1000	426	145	156	539	93	76	260	114	150	239	209
2	260	243	187	466	87	86	232	399	87	69	81	173
3	200	375	84	605	54	82	144	191	689	91	63	55
4	150	249	391	335	58	284	183	323	417	185	62	153
5	510	163	192	420	118	81	54	695	222	875	640	281
6	490	369	534	362	89	54	55	838	456	759	117	512
7	420	239	852	264	293	110	261	109	388	814	70	522
8	190	355	627	171	182	131	274	169	418	788	420	77
9	80	482	635	211	51	212	476	568	478	282	536	176
10	250	235	389	613	290	272	72	763	517	572	573	123
11	280	454	523	709	203	189	56	499	420	86	191	122
12	80	685	153	203	174	306	142	491	207	86	297	106
13	420	1460	380	375	57	802	46	1730	499	58	450	450
14	370	797	365	167	55	689	197	1590	458	115	273	738
15	220	782	220	80	119	94	179	978	602	96	236	103
16	70	1640	380	72	169	154	91	343	253	70	284	427
17	120	679	281	434	271	285	138	322	544	223	462	920
18	340	703	151	762	164	258	246	531	695	344	329	318
19	680	834	134	645	190	344	188	1610	655	234	166	653
20	620	274	242	530	300	816	75	1700	758	189	109	943
21	111	249	602	560	552	341	4040	1090	116	475	333	780
22	559	740	395	355	86	187	1880	610	251	422	633	267
23	319	627	195	339	157	462	1680	2330	71	76	352	68
24	362	762	147	680	432	85	1370	1210	625	164	115	50
25	391	1790	73	133	164	227	595	1480	230	100	126	49
26	208	1160	103	127	271	111	194	1140	263	777	58	127
27	294	678	1450	195	133	145	92	1710	328	95	228	557
28	179	1030	908	272	203	75	124	692	490	233	297	920
29	489	818	658	178	---	313	632	522	470	158	559	497
30	499	170	1010	207	---	357	247	647	456	117	426	86
31	355	---	674	399	---	84	---	1060	---	76	580	---
TOTAL	10516	19468	12880	11205	5261	7727	14059	26600	12177	8777	9355	10472
MEAN	339	649	415	361	188	249	469	858	406	283	302	349
MAX	1000	1790	1450	762	539	816	4040	2330	758	875	640	943
MIN	70	163	73	72	51	54	46	109	71	58	58	49
CFSM	1.70	3.25	2.08	1.81	.94	1.25	2.35	4.29	2.03	1.42	1.51	1.75
IN.	1.96	3.62	2.40	2.08	.98	1.44	2.61	4.95	2.26	1.63	1.74	1.95
AC-FT	20860	38610	25550	22230	10440	15330	27890	52760	24150	17410	18560	20770

WTR YR 1983 TOTAL 148497 MEAN 407 MAX 4040 MIN 46 CFSM 2.04 IN 27.62 AC-FT 294500

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RIO GRANDE DE ARECIBO BASIN

50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	968	186	97	835	63	49	112	528	136	72	79
2	62	903	789	66	254	353	92	54	254	391	509	96
3	45	261	452	128	192	126	523	42	54	366	591	974
4	151	992	277	53	195	172	102	41	228	90	100	1190
5	208	494	212	573	66	248	55	39	123	142	76	861
6	73	1080	245	100	73	52	464	63	713	72	104	750
7	74	950	120	58	48	485	74	219	1420	60	52	253
8	105	1050	170	50	96	66	54	166	711	48	212	112
9	78	1090	93	79	51	679	114	124	282	47	91	166
10	64	892	459	563	238	263	485	69	306	183	50	330
11	307	1260	163	632	51	283	536	221	246	56	55	729
12	821	1330	459	403	41	891	88	60	426	351	56	929
13	198	621	87	202	42	339	686	57	231	315	401	1910
14	59	989	59	100	696	45	459	40	645	74	563	2810
15	78	339	161	138	166	42	298	37	520	51	91	1380
16	306	683	83	127	397	40	240	38	85	328	451	1540
17	984	797	94	105	485	40	150	343	52	79	136	1830
18	1110	746	106	49	66	38	54	446	281	226	504	2310
19	1400	744	369	57	64	63	54	904	591	397	137	2430
20	784	310	831	237	295	60	47	225	586	321	610	1360
21	1190	356	416	157	579	38	111	510	201	70	101	1840
22	613	529	79	284	573	46	436	333	494	47	68	1800
23	1540	184	57	250	388	52	495	871	352	129	62	1760
24	1170	268	65	142	326	40	112	603	152	307	603	1690
25	741	64	115	404	288	158	49	766	1030	74	216	793
26	961	143	93	335	236	172	65	263	1350	410	122	547
27	534	335	150	577	515	287	48	52	533	109	72	512
28	810	582	111	81	291	113	49	206	111	53	99	436
29	337	159	117	47	66	532	99	650	416	48	235	248
30	134	290	118	638	---	97	127	1290	287	393	357	237
31	271	---	62	754	---	51	---	749	---	284	336	---
TOTAL	15159	19409	6798	7486	7613	5947	6215	9618	13208	5657	7130	32402
MEAN	489	647	219	241	263	192	207	310	440	182	230	1080
MAX	1540	1330	831	754	835	891	686	1290	1420	410	610	2810
MIN	45	64	57	47	41	38	47	37	52	47	50	79
CFSM	2.45	3.24	1.10	1.21	1.32	.96	1.04	1.55	2.20	.91	1.15	5.40
IN.	2.82	3.61	1.26	1.39	1.42	1.11	1.16	1.79	2.46	1.05	1.33	6.03
AC-FT	30070	38500	13480	14850	15100	11800	12330	19080	26200	11220	14140	64270

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CAL YR 1983   TOTAL   146999   MEAN 403   MAX  4040   MIN 65   CFSM 2.02   IN 27.34   AC-FT  291600
WTR YR 1984   TOTAL   136642   MEAN 373   MAX  2810   MIN 37   CFSM 1.87   IN 25.42   AC-FT  271000
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WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS APRIL 1982 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 04	1119	50	277	27.5	APR, 10	1113	54	260	27.0
NOV, 04	1042	86	237	24.5	MAY, 01	1040	56	232	26.0
DEC, 14	1030	60	220	25.0	JUL, 11	0956	57	227	30.0
JAN, 10	1117	51	282	28.0	AUG, 01	1131	63	270	27.5
FEB, 21	1107	77	239	24.5	SEP, 07	1055	103	237	26.5
MAR, 14	1100	45	247	25.5					

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RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR

LOCATION.--Lat 18°18'02", long 66°46'58", Hydrologic Unit 21010001, on downstream side of left abutment of bridge on Highway 111, 1.2 mi (1.9 km) upstream from natural tunnel, 1.5 mi (2.4 km) northeast of Angeles, and 5.8 mi (9.3 km) northwest of Utuado.

DRAINAGE AREA.--18.4 sq mi (47.7 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1944 to June 1958 (daily stage and two to four measurements per month by Puerto Rico Water Resources Authority), November 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 938.32 ft (286.000 m) above mean sea level. Prior to Nov. 17, 1966, non-recording gage and Nov. 17, 1966 to Sept. 30, 1978 recording gage, both at present site and datum 3.00 ft (0.914 m) higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--24 years (1961-84), 48.2 cu ft/s (1.365 cu m/s), 35.57 in/yr (903 mm/yr), 34,920 acre-ft/yr (43.0 cu hm/yr); median of yearly mean discharges, 48 cu ft/s (1.36 cu m/s), 34,800 acre-ft/yr (43 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,950 cu ft/s (253 cu m/s) May 17, 1963, gage height, 13.29 ft (4.051 m) datum then in use, from floodmark, from rating curve extended above 500 cu ft/s (14.2 cu m/s) on basis of slope-area measurement of peak flow; minimum, 6.6 cu ft/s (0.187 cu m/s) June 12, 1977, gage height, 0.12 ft (0.037 m) datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 cu ft/s (85.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
May 22	1630	*3,650	103	12.54	3 822

Minimum discharge, 5.9 cu ft/s (0.167 cu m/s) May 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	46	34	22	18	12	11	7.4	43	40	31	91
2	20	44	35	21	18	12	11	7.4	38	41	31	170
3	19	59	34	21	17	11	10	13	42	47	30	145
4	30	153	33	26	17	11	12	10	132	53	36	235
5	22	85	32	21	15	10	10	7.9	176	83	30	133
6	55	89	31	20	15	10	10	6.7	192	35	27	96
7	28	148	30	20	15	10	10	6.8	90	33	26	60
8	48	91	30	20	16	10	11	9.1	63	30	26	67
9	41	95	30	38	32	10	11	9.2	58	26	27	56
10	43	156	29	23	33	10	9.9	6.7	58	30	25	72
11	63	146	29	20	32	9.9	10	6.8	56	56	27	96
12	58	94	28	20	20	9.7	9.9	6.5	107	32	40	105
13	40	74	27	20	23	9.6	11	9.2	130	24	38	233
14	32	89	28	20	18	9.4	11	9.5	82	23	27	123
15	70	72	28	23	17	9.3	9.7	31	56	23	29	104
16	85	61	27	25	16	9.3	8.9	77	112	20	27	124
17	81	56	27	20	15	12	8.1	37	85	20	25	188
18	63	52	27	19	15	10	8.1	56	61	31	24	175
19	42	52	27	19	15	9.4	8.3	36	52	86	50	130
20	201	48	32	19	14	25	9.1	20	47	62	32	155
21	90	48	27	18	14	16	9.1	38	73	52	24	111
22	269	45	26	19	13	11	9.2	260	49	56	31	94
23	117	46	25	19	13	10	8.3	100	42	45	26	85
24	75	45	25	19	13	9.9	7.9	93	44	40	25	76
25	63	42	25	19	13	15	7.6	80	59	40	46	69
26	55	40	24	19	12	11	9.2	71	48	40	90	74
27	50	38	23	19	12	9.8	12	104	45	37	89	66
28	47	35	27	19	12	9.5	12	81	44	42	49	75
29	75	35	29	19	12	9.4	8.0	97	42	43	36	69
30	62	35	28	19	---	10	7.6	85	39	35	33	66
31	52	---	23	19	---	11	---	53	---	31	54	---
TOTAL	2017	2119	880	644	495	342.2	290.9	1635.2	2165	1256	1113	3343
MEAN	65.1	70.6	28.4	20.8	17.1	11.0	9.70	46.3	72.2	40.5	35.9	111
MAX	269	156	35	38	33	25	12	260	192	86	90	235
MIN	19	35	23	18	12	9.3	7.6	6.5	38	20	24	56
CFSM	3.54	3.84	1.54	1.13	.93	.60	.53	2.52	3.92	2.20	1.95	6.03
IN.	4.08	4.28	1.78	1.30	1.00	.69	.59	2.90	4.38	2.54	2.25	6.76
AC-FT	4000	4200	1750	1280	982	679	577	2850	4290	2490	2210	6630

CAL YR 1983 TOTAL 12207.8 MEAN 33.4 MAX 269 MIN 8.3 CFSM 1.82 IN 24.68 AC-FT 24210
WTR YR 1984 TOTAL 16100.3 MEAN 44.0 MAX 269 MIN 6.5 CFSM 2.39 IN 32.55 AC-FT 31930

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: January 1968 to current year.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis and during high flow events. Estimates for period of missing daily record were made from a sediment transport curve developed from a period of record of 10 years.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 20,400 mg/L November 27, 1968; minimum daily mean, 0.0 mg/L during many years.
SEDIMENT LOADS: Maximum daily, 110,000 tons (100,000 tonnes) November 27, 1968, minimum daily, 0.0 ton (0.0 tonne) during many years.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,300 mg/L Oct. 22, 1983; minimum daily mean, 1.0 mg/L several days during water year 1984.
SEDIMENT LOADS: Maximum daily, 4,290 tons (3,890 tonnes) Oct. 22, 1983; minimum daily, 0.02 ton (0.02 tonne) several days during water year 1984.

WATER-QUALITY DATA, WATER YEARS OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
12...	1140	39	145	7.9	22.5	120	8.0	95	32	42000	58000
DEC											
20...	1355	25	172	8.2	22.0	2.6	8.9	104	<10	670	400
FEB , 1984											
07...	1650	15	162	8.6	22.0	1.9	8.9	104	34	<10	550
APR											
18...	1100	8.2	187	8.7	25.0	5.1	9.0	112	13	K82	K2700
JUN											
20...	1610	46	170	8.2	25.0	7.6	8.4	105	<10	270	500
AUG											
15...	1725	26	172	8.0	25.0	3.2	8.1	101	<10	5700	530

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
12...	50	5	13	4.3	6.3	.4	2.3	45	12	6.7	<.10
DEC											
20...	--	--	--	--	--	--	--	57	--	--	--
FEB , 1984											
07...	--	--	--	--	--	--	--	59	--	--	--
APR											
18...	68	5	17	6.1	8.9	.5	1.5	63	15	8.1	<.10
JUN											
20...	--	--	--	--	--	--	--	56	--	--	--
AUG											
15...	60	4	15	5.5	8.1	.5	1.5	56	17	7.8	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
12...	18	90	9.5	<1	1.1	.03	1.1	.10	.60	.70	1.8
DEC											
20...	--	--	--	6	--	<.01	.70	.04	.16	.20	.90
FEB , 1984											
07...	--	--	--	7	--	<.01	.40	<.01	--	.40	.80
APR											
18...	23	120	2.7	6	--	<.01	.10	.09	.71	.80	.90
JUN											
20...	--	--	--	10	--	<.01	.70	.01	.89	.90	1.6
AUG											
15...	22	110	7.8	8	--	<.01	.40	<.01	--	<.10	--

K = non-ideal count

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RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
12...	8.0	.11	2	200	3	25	2	<.1	<1	<1
DEC										
20...	4.0	.04	--	--	--	--	--	--	--	--
FEB , 1984										
07...	3.5	.03	--	--	--	--	--	--	--	--
APR										
18...	4.0	.02	1	<100	1	3	<1	<.1	<1	<1
JUN										
20...	7.1	.02	--	--	--	--	--	--	--	--
AUG										
15...	--	.02	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV, 02	1230	45	153	24.0	MAY, 01	1925	7.5	145	24.0
JAN, 10	1039	26	139	21.5	JUL, 09	1436	26	157	25.5

DATE	TIME	TEMPERATURE (DEG C)	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED CONCENTRATION (MG/L)	SEDIMENT, SUSPENDED DISCHARGE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
OCT , 1983								
22...	1710	21.5	1150	4710	14600	18	28	40
22...	1725	21.5	1400	6070	22900	15	23	32
22...	1750	21.5	1180	5250	16700	15	24	34
MAY , 1984								
16...	1700	21.5	377	8340	8490	10	21	33
16	1715	21.5	338	7230	6500	5	11	18
16...	1730	21.5	295	6690	5330	11	22	29
22...	1630	20.0	2670	9200	66300	6	13	22
22...	1645	20.0	2590	10700	74800	6	15	23
22...	1700	20.0	2060	10430	57300	9	19	28
22...	1730	20.0	1160	9420	29500	13	19	27
JUNE								
04...	1710	22.0	1500	9840	39900	8	14	20
04...	1725	--	1450	7650	29900	12	13	25
04...	1755	--	562	9570	14500	13	19	25
13...	1630	21.5	805	5860	12700	9	15	24
13...	1645	21.5	628	5250	8900	9	15	22
13...	1715	21.5	405	6340	6930	7	13	21
SEPT								
05...	1555	--	130	4070	1430	10	17	28
13...	1605	21.5	765	4360	9020	11	13	20
13...	1645	21.0	689	5530	10300	11	18	27
13...	1655	21.0	1670	10800	48700	5	7	11
13...	1710	21.5	1550	8390	35100	6	9	14
13...	1725	21.5	1160	6480	20300	9	12	18

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
OCT , 1983							
22...	59	78	83	95	97	98	99
22...	43	68	86	97	98	99	100
22...	55	82	93	98	99	100	100
MAY , 1984							
16...	47	64	92	95	97	99	100
16...	32	47	85	89	94	98	100
16...	44	50	91	95	97	99	100
22...	33	46	85	93	98	99	100
22...	32	43	85	91	97	99	100
22...	40	50	88	93	97	99	100
22...	38	53	76	87	95	98	99
JUN							
04...	23	39	65	78	92	97	99
04...	36	50	64	77	93	99	100
04...	34	47	71	86	95	98	99
13...	37	51	71	88	97	99	100
13...	36	54	76	86	95	98	99
13...	30	46	65	82	91	96	98
SEP							
05...	45	66	81	90	96	98	100
13...	31	43	56	74	89	96	100
13...	40	55	69	82	93	98	100
13...	17	27	47	70	89	96	99
13...	23	35	53	69	87	96	99
13...	24	43	60	76	91	96	97

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RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	21	16	.91	46	94	11	34	57	5.3
2	20	14	.76	44	120	17	35	56	5.1
3	19	12	.62	59	146	25	34	54	4.9
4	30	40	3.2	153	578	306	33	48	4.2
5	22	18	1.1	85	276	72	32	46	3.9
6	55	225	93	89	292	119	31	44	3.7
7	28	65	4.9	148	696	917	30	40	3.2
8	48	134	46	91	295	79	30	44	3.7
9	41	78	11.3	95	316	109	30	42	3.5
10	43	92	11	156	771	1290	29	38	3.0
11	63	172	29	146	612	432	29	37	2.9
12	58	116	32	94	328	96	28	32	2.3
13	40	94	12	74	216	44	27	30	2.2
14	32	53	4.9	89	273	95	28	32	2.3
15	70	241	103	72	241	53	28	32	2.3
16	85	298	173	61	176	31	27	30	2.2
17	81	277	97	56	140	21	27	30	2.2
18	63	202	43	52	126	18	27	30	2.2
19	42	94	11	52	126	18	27	29	2.0
20	201	731	2060	48	112	15	32	66	11
21	90	318	98	48	113	15	27	42	3.5
22	269	1300	4290	45	103	13	26	26	1.8
23	117	555	239	46	103	13	25	24	1.6
24	75	322	100	45	101	12	25	24	1.6
25	63	176	31	42	93	11	25	24	1.6
26	55	140	21	40	78	8.3	26	21	1.3
27	50	120	16	38	65	6.8	23	18	1.1
28	47	108	14	35	60	5.7	27	43	3.8
29	75	247	100	35	59	5.4	29	39	3.2
30	62	232	51	35	58	5.4	28	32	2.4
31	52	148	25	---	---	---	23	20	1.2
TOTAL	2017	---	7727.69	2119	---	3903.6	880	---	95.2

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	22	18	1.1	18	10	.49	12	4	.13
2	21	16	.91	18	8	.37	12	4	.13
3	21	16	.91	17	7	.31	11	2	.06
4	20	14	.76	17	7	.28	11	2	.04
5	21	16	.91	15	5	.20	10	1	.03
6	20	14	.76	15	5	.20	10	1	.03
7	20	14	.76	15	5	.20	10	1	.03
8	20	14	.76	16	9	.41	10	1	.03
9	38	72	7.4	32	59	12	10	1	.03
10	23	23	1.5	33	62	6.9	10	1	.03
11	20	13	.69	32	63	6.8	9.9	1	.03
12	20	12	.62	20	16	.96	9.7	1	.03
13	20	13	.69	23	19	1.2	9.6	1	.03
14	20	13	.69	18	11	.56	9.4	1	.03
15	28	45	7.9	17	7	.31	9.3	1	.02
16	25	34	3.1	16	6	.23	9.3	1	.02
17	20	14	.76	15	5	.20	12	2	.04
18	19	12	.62	15	5	.18	10	2	.05
19	19	12	.62	13	4	.15	9.4	1	.03
20	19	11	.55	14	4	.15	25	55	11
21	18	10	.49	14	4	.13	16	11	.82
22	19	11	.55	13	3	.11	11	2	.06
23	19	12	.62	13	3	.11	10	2	.04
24	19	13	.69	13	3	.11	9.9	1	.03
25	19	12	.62	13	3	.09	15	12	1.1
26	19	12	.62	12	2	.06	11	5	.20
27	19	12	.62	12	2	.06	9.8	5	.12
28	19	11	.55	12	2	.06	9.5	5	.12
29	19	10	.49	12	2	.06	9.4	1	.03
30	19	10	.49	---	---	---	10	2	.04
31	19	10	.49	---	---	---	11	2	.06
TOTAL	644	---	38.26	495	---	32.89	342.2	---	14.42

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RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	11	2	.06	7.4	1	.02	43	92	11
2	11	2	.04	7.4	1	.02	38	70	7.2
3	10	2	.04	13	12	1.1	42	90	12
4	12	2	.06	10	2	.07	132	558	1060
5	10	2	.04	7.9	1	.02	176	695	459
6	10	1	.03	6.7	1	.02	192	814	1090
7	10	1	.03	6.8	1	.02	90	230	70
8	11	2	.08	9.1	2	.10	63	178	31
9	11	2	.05	9.2	2	.05	58	152	24
10	9.9	1	.03	6.7	1	.02	58	152	24
11	10	1	.03	6.8	1	.02	56	138	22
12	9.9	1	.03	6.5	1	.02	107	416	379
13	11	2	.05	9.2	2	.04	130	598	642
14	11	2	.05	9.5	1	.03	82	257	62
15	9.7	1	.03	31	86	40	56	144	22
16	8.9	1	.02	77	268	149	112	422	296
17	8.1	1	.02	37	79	11	85	266	66
18	8.1	1	.02	56	248	157	61	166	28
19	8.3	1	.02	36	74	10	52	134	19
20	9.1	1	.02	20	15	.86	47	110	14
21	9.1	1	.02	38	91	17	73	234	101
22	9.2	1	.02	260	1100	3620	69	126	18
23	8.3	1	.02	100	338	104	62	90	10
24	7.9	1	.02	93	333	144	46	84	10
25	7.6	1	.02	90	243	62	59	149	29
26	9.2	1	.04	71	226	75	48	116	16
27	12	3	.10	104	362	165	45	109	14
28	12	1	.03	91	247	66	44	104	13
29	8.0	1	.02	97	337	138	42	86	9.7
30	7.6	1	.02	85	269	70	39	74	7.7
31	---	---	---	53	132	19	---	---	---
TOTAL	290.9	---	1.06	1435.2	---	4847.41	2165	---	4556.

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	40	76	8.0	31	42	3.5	91	323	137
2	41	82	9.0	31	42	3.5	170	675	1610
3	47	109	15	30	37	2.9	145	534	336
4	53	129	20	36	61	6.5	235	936	2390
5	83	271	81	30	47	4.2	133	464	171
6	35	64	6.4	27	29	2.0	96	302	88
7	33	52	4.6	26	26	1.8	60	158	26
8	30	40	3.4	26	42	3.6	67	199	45
9	26	24	1.6	27	42	3.6	56	152	25
10	30	70	5.0	25	23	1.5	72	213	67
11	56	171	62	27	35	2.8	96	363	131
12	32	59	6.7	40	98	12	105	362	125
13	24	19	1.2	38	96	14	233	1090	2000
14	23	29	2.2	27	32	2.4	123	418	147
15	23	30	2.3	29	41	3.4	104	337	101
16	20	14	.76	27	35	2.7	124	451	224
17	20	12	.62	25	28	2.0	188	789	618
18	31	53	10	24	21	1.3	175	636	315
19	86	298	188	50	138	36	130	453	167
20	62	158	30	32	58	6.4	155	554	237
21	52	134	20	26	26	1.8	111	368	113
22	36	131	29	31	27	1.9	94	292	74
23	45	101	12	26	27	1.9	85	252	57
24	40	78	8.4	25	23	1.5	76	222	45
25	40	80	8.7	46	115	39	69	196	37
26	40	72	7.4	90	356	197	74	218	69
27	37	66	6.5	89	297	96	66	200	38
28	42	84	10	49	125	19	75	225	48
29	43	96	12	36	64	6.3	69	204	39
30	35	54	5.0	33	48	4.2	66	190	32
31	31	42	3.5	54	141	63	---	---	---
TOTAL	1256	---	583.28	1113	---	527.7	3343	---	9512
YEAR	16100.3		31850.09						

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RIO GRANDE DE ARECIBO BASIN

50028400 RIO TANAMA AT CHARCO HONDO, PR

LOCATION.--Lat 18°24'52", long 66°42'52", on right bank at abandoned power house at Charco Hondo, 1.5 mi (2.4 km) upstream from mouth, and 4 mi (6 km) south of Arecibo.

DRAINAGE AREA.--57.6 sq mi (149.2 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1969 to June 1971, October 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 60 ft (18 m), from topographic map.

REMARKS.--Records fair. Diversion 0.8 mi (1.3 km) upstream for municipal supply of Arecibo.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,120 cu ft/s (117 cu m/s) Apr. 21, 1969, gage height, 12.22 ft (3.725 m) from floodmark, from rating curve extended above 1,000 cu ft/s (28 cu m/s); minimum, 21 cu ft/s (0.595 cu m/s) Apr. 27, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 cu ft/s (56.6 cu m/s), revised, and maximums (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 20	1645	*2,320	65.7	10.55	3.216

Minimum discharges, 21 cu ft/s (0.595 cu m/s) Apr. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	104	67	45	36	30	30	30	71	55	49	134
2	47	104	67	47	37	31	28	29	69	54	48	253
3	46	109	56	46	36	29	29	30	71	54	48	260
4	48	298	63	45	36	29	30	41	192	71	52	391
5	55	258	62	47	36	29	31	32	339	110	56	224
6	84	128	63	45	35	29	27	29	447	74	48	189
7	98	296	62	45	35	29	27	29	329	57	47	112
8	168	209	60	44	34	28	26	28	126	55	46	86
9	133	157	59	81	38	29	27	35	109	55	47	103
10	97	227	58	53	62	28	26	30	149	54	46	85
11	90	235	59	47	60	27	29	30	86	75	45	139
12	95	169	57	45	54	27	29	30	140	87	56	180
13	78	143	57	45	44	26	29	31	192	57	76	390
14	55	151	56	47	43	27	30	35	134	53	60	313
15	92	120	55	44	37	29	30	30	84	57	53	248
16	115	100	54	63	37	27	29	130	129	50	68	295
17	127	92	53	46	35	31	28	93	142	48	59	535
18	152	87	53	42	34	33	29	84	91	47	50	621
19	143	85	52	41	33	29	26	130	91	120	57	344
20	403	84	52	41	33	23	25	58	80	116	77	294
21	375	83	61	40	33	51	26	62	97	67	52	219
22	383	106	56	40	32	35	26	308	96	71	55	178
23	213	82	51	40	33	42	27	213	70	73	49	147
24	124	78	50	39	32	34	27	175	60	57	46	125
25	123	85	49	40	31	32	26	179	73	55	49	105
26	115	74	49	39	31	41	22	106	103	52	95	95
27	109	71	48	38	31	34	28	192	74	51	173	98
28	106	70	48	37	30	33	31	172	63	51	98	94
29	119	68	49	37	30	31	30	122	59	57	65	127
30	123	67	47	37	---	25	25	145	57	51	57	108
31	106	---	50	36	---	25	---	80	---	49	56	---
TOTAL	4058	3939	1731	1385	1078	962	833	2723	3813	1986	1891	6492
MEAN	131	131	55.8	44.7	37.2	31.0	27.8	87.8	127	64.1	60.7	216
MAX	403	298	67	81	62	51	31	308	447	120	173	621
MIN	46	67	47	36	30	26	22	28	57	47	45	85
CFSM	2.27	2.27	.97	.79	.65	.54	.48	1.52	2.21	1.11	1.05	3.75
IN.	2.62	2.54	1.12	.89	.70	.62	.54	1.76	2.46	1.28	1.21	4.19
AC-FT	8050	7810	3430	2750	2140	1910	1650	5400	7560	3940	3730	12880

CAL YR 1983 TOTAL 27278 MEAN 74.7 MAX 403 MIN 30 CFSM 1.30 IN 17.62 AC-FT 54110
WTR YR 1984 TOTAL 30881 MEAN 84.4 MAX 621 MIN 22 CFSM 1.47 IN 19.94 AC-FT 61250

WATER QUALITY RECORDS.

PERIOD OF RECORD.--MARCH 1983 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT, 04	1613	54	267	25.5
NOV, 16	1156	101	242	23.5
DEC, 12	1300	56	262	22.5
JAN, 10	1355	55	258	24.5
FEB, 21	1255	32	259	21.5
MAR, 14	1252	26	272	23.0
APR, 10	1320	26	273	23.0
MAY, 01	1250	22	276	22.5
JUN, 04	1433	67	251	27.5
JUL, 11	1324	56	233	29.0
AUG, 01	1409	49	282	25.5
SEP, 07	1356	103	228	25.0

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RIO GRANDE DE ARECIBO BASIN

50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963-66, 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV , 1983											
03...	1245	202	232	7.6	24.0	33	7.2	86	12	4630	2200
DEC											
08...	1130	128	282	8.1	24.5	4.1	9.0	108	14	3900	3700
FEB , 1984											
06...	1250	103	243	8.4	25.0	1.9	11.4	138	12	K670	K70
MAY											
04...	1830	78	267	8.6	25.0	1.3	13.4	171	<10	240	K165
JUN											
13...	1120	214	200	8.1	27.0	210	7.8	98	20	22000	41000
AUG											
01...	1205	111	274	8.3	27.0	--	9.5	120	--	K680	K120

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
NOV , 1983											
03...	100	9	33	5.0	8.4	.4	1.6	94	11	9.2	.10
DEC											
08...	--	--	--	--	--	--	--	120	--	--	--
FEB , 1984											
06...	--	--	--	--	--	--	--	115	--	--	--
MAY											
04...	120	7	38	5.6	8.6	.4	.80	111	11	11	.10
JUN											
13...	--	--	--	--	--	--	--	75	--	--	--
AUG											
01...	--	--	--	--	--	--	--	109	--	--	--

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
NOV , 1983											
03...	13	140	75	28	--	<.01	.70	.25	.25	.50	1.2
DEC											
08...	--	--	--	24	.58	.02	.60	.06	--	<.10	--
FEB , 1984											
06...	--	--	--	11	.19	.01	.20	<.01	--	.60	.80
MAY											
04...	12	150	32	2	.19	.01	.20	<.01	--	.70	.90
JUN											
13...	--	--	--	337	.83	.07	.90	.22	.58	.80	1.7
AUG											
01...	--	--	--	--	--	<.01	.33	.04	--	<.10	--

K = non-ideal count

50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
NOV , 1983										
03...	5.3	.06	1	<100	<1	3	4	<.1	<1	<1
DEC										
08...	--	.06	--	--	--	--	--	--	--	--
FEB , 1984										
06...	3.5	.03	--	--	--	--	--	--	--	--
MAY										
04...	4.9	.02	1	100	1	<1	1	<.1	<1	<1
JUN										
13...	7.5	.03	--	--	--	--	--	--	--	--
AUG										
01...	--	<.01	--	--	--	--	--	--	--	--

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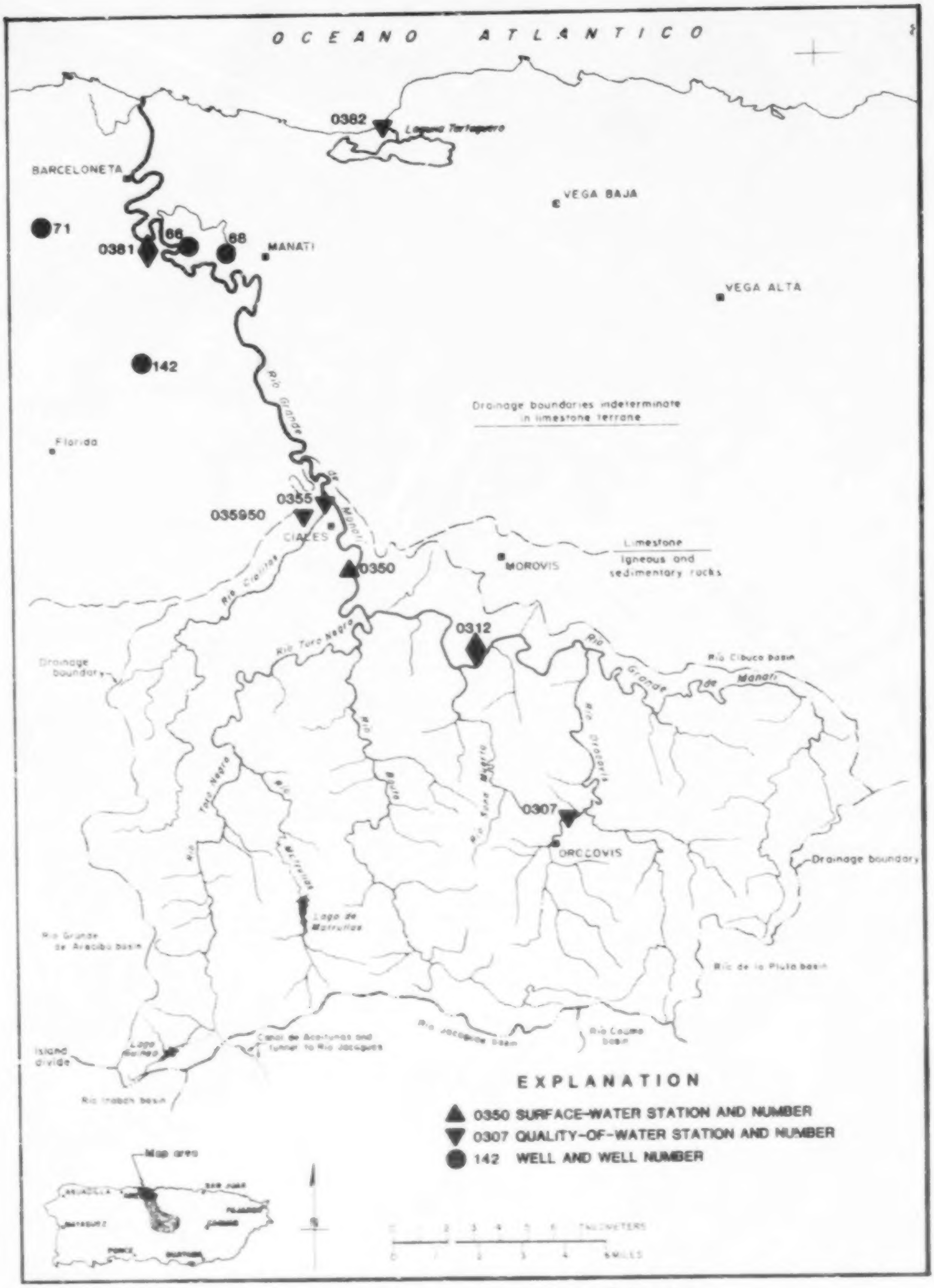
OCEANO ATLANTICO
0382
Laguna Tortuguero
BARCELONETA
VEGA BAJA
71
66
68
0381
MANATI
VEGA ALTA
142
Río Grande de Manatí
Drainage boundaries indeterminate in limestone terrane
Florida
0355
035950
CIALES
Río Cialitos
Limestone
Igneous and sedimentary rocks
MOROVIS
0350
0312
Río Toro Negro
Drainage boundary
Río Cibuco basin
Río Grande de Manatí
Río Orocovis
Río Toro Negro
Río Bauta
Río Toro Negro
Río Matrullas
0307
OROCOVIS
Drainage boundary
Lago de Matrullas
Río Grande de Arecibo basin
Río de la Plata basin
Río Jacaguas basin
Río Coamo basin
Island divide
Lago Guineo
Canal de Aceitunas and tunnel to Río Jacaguas
Río Inabón basin
EXPLANATION
▲ 0350 SURFACE-WATER STATION AND NUMBER
▼ 0307 QUALITY-OF-WATER STATION AND NUMBER
● 142 WELL AND WELL NUMBER
Map area
AGUADILLA
SAN JUAN
MAYAGUEZ
PONCE
N
0 1 2 3 4 5 6 KILOMETERS
0 1 2 3 4 5 MILES

Figure 13.--Río Grande de Manatí basin.

RIO GRANDE DE MANATI BASIN

50030700 RIO OROCOVIS NEAR OROCOVIS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°14'20", long 66°22'58", at flat low bridge about 300 ft (91 m) northwest of Highway 568, 1.0 mi (1.6 km) north of Orocovis plaza.

DRAINAGE AREA.--10.1 sq mi (26.2 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
13...	1125	5.6	320	8.3	26.0	5.3	8.0	104	40	K1200	340
DEC											
09...	1045	6.1	325	8.3	23.5	1.2	9.0	105	11	2600	490
MAR , 1984											
07...	1455	3.5	310	8.4	25.0	3.1	13.6	169	20	23000	940
MAY											
07...	1905	3.6	343	8.3	26.5	2.7	8.8	111	<10	2600	490
JUN											
14...	1650	3.9	33[illegible]	8.5	28.0	5.6	8.0	108	<10	25000	580
AUG											
03...	1615	3.1	357	8.4	28.0	.50	9.3	125	<10	420	510

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
13...	130	4	32	12	13	.5	1.7	125	9.2	17	.20
DEC											
09...	--	--	--	--	--	--	--	126	--	--	--
MAR , 1984											
07...	--	--	--	--	--	--	--	137	--	--	--
MAY											
07...	140	0	36	12	15	.6	1.7	141	9.1	16	.20
JUN											
14...	--	--	--	--	--	--	--	139	--	--	--
AUG											
03...	140	0	36	12	17	.6	2.4	139	16	21	.20

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
13...	34	190	2.9	2	2.3	.01	2.3	.02	.28	.30	2.6
DEC											
09...	--	--	--	18	2.0	.01	2.0	.05	.25	.30	2.3
MAR , 1984											
07...	--	--	--	6	.49	.01	.50	.03	.67	.70	1.2
MAY											
07...	33	210	1.9	7	1.3	.02	1.3	.83	.27	1.1	2.4
JUN											
14...	--	--	--	10	.99	.01	1.0	.05	.15	.20	1.2
AUG											
03...	29	220	1.8	1	2.4	.02	2.4	.08	1.0	1.1	3.5

K = non-ideal count

50030700 RIO OROCOVIS NEAR OROCOVIS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
13...	12	.36	1	100	<1	8	1	<.1	<1	<1
DEC										
09...	10	.31	--	--	--	--	--	--	--	--
MAR , 1984										
07...	5.3	.22	--	--	--	--	--	--	--	--
MAY										
07...	11	.41	1	<100	1	<1	1	.3	<1	<1
JUN										
14...	5.3	.42	--	--	--	--	--	--	--	--
AUG										
03...	15	.77	--	--	--	--	--	--	--	--

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RIO GRANDE DE MANATI BASIN

50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR

LOCATION.--Lat 18°17'45", long 66°24'47", Hydrologic Unit 21010001, on left bank, 0.1 mi (0.2 km) downstream from Quebrada Perchas, 0.8 mi (1.3 km) upstream from Río Sana Muerto, and 2.2 mi (3.5 km) south of Morovis.

DRAINAGE AREA.--55.2 sq mi (143.0 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 440 ft (134.1 m), from topographic map. Feb. 2, 1966 to Apr. 27, 1967, staff gage read twice daily.

REMARKS.--Records fair. Public water-supply pumpage, about 300 ft (91 m) above the station, influences low-flow discharges.

AVERAGE DISCHARGE.--19 years (1966-84), 103 cu ft/s (2.917 cu m/s), 25.34 in/yr (644 mm/yr), 74,620 acre-ft/yr (92.0 cu hm/yr); median of yearly mean discharges, 103 cu ft/s (2.92 cu m/s), 74,600 acre-ft/yr (92 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 cu ft/s (991 cu m/s) Oct. 9, 1970, gage height, 20.3 ft (6.19 m), from floodmarks, from rating curve extended above 200 cu ft/s (5.7 cu m/s) on basis of computations of flow over broad-crested weir and indirect measurements of peak flow at 13.5 ft (4.11 m), 16.0 ft (4.88 m) and 20.3 ft (6.19 m); minimum, 4.4 cu ft/s (0.125 cu m/s) Apr. 15, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 cu ft/s (99.1 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 11	1730	*24,100	682	12.62	3.846	Sept. 17	1645	3,860	109	5.31	1.618

Minimum discharge. 4.4 cu ft/s (0.125 cu m/s) Apr. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	33	29	27	19	15	17	9.7	20	12	8.9	17
2	28	31	40	23	19	13	13	9.4	15	11	15	44
3	28	31	38	23	19	14	10	9.4	15	12	12	14
4	33	585	29	22	20	13	12	8.6	89	13	9.7	64
5	30	367	30	55	20	13	9.7	8.7	105	171	12	98
6	38	112	37	31	20	12	8.7	8.1	111	87	9.9	143
7	27	76	31	30	19	11	8.0	8.8	105	34	8.3	35
8	26	54	29	25	19	9.8	7.9	9.3	108	22	7.5	18
9	26	47	28	31	24	9.4	8.6	8.7	56	18	7.1	17
10	26	97	26	30	27	11	8.3	7.9	50	16	6.5	48
11	26	101	30	27	52	12	8.1	9.1	38	17	6.1	1770
12	27	129	27	26	33	12	7.6	8.0	31	18	6.0	317
13	30	54	25	27	33	12	8.2	17	29	13	24	98
14	28	44	25	28	29	12	8.3	29	27	16	14	68
15	27	39	25	26	24	11	8.3	14	21	17	8.7	43
16	27	36	25	23	30	14	7.5	118	18	14	9.6	34
17	61	33	25	22	30	12	7.8	56	18	12	11	571
18	75	44	27	22	24	12	8.3	73	18	12	8.3	371
19	33	35	26	21	24	11	7.2	114	21	11	6.3	438
20	46	32	24	21	24	10	7.7	113	23	11	5.7	219
21	60	31	33	21	22	9.7	8.3	37	78	11	5.8	232
22	121	30	26	21	20	9.4	8.6	36	134	11	8.3	102
23	120	31	28	21	20	9.6	8.6	42	31	13	7.5	69
24	79	31	25	22	20	10	8.0	89	21	12	5.7	57
25	42	33	23	23	18	8.6	7.2	44	18	10	9.1	41
26	49	30	22	22	18	8.3	7.2	33	16	16	13	33
27	32	28	24	21	18	43	15	26	14	13	14	30
28	27	29	23	20	18	18	37	21	13	14	14	27
29	30	28	29	19	17	13	23	19	13	21	8.4	35
30	34	31	25	19	---	12	13	26	13	12	7.2	43
31	58	---	31	19	---	12	---	30	---	9.5	11	---
TOTAL	1330	2279	865	769	680	392.8	318.1	1042.7	1239	679.5	300.6	5096
MEAN	42.9	75.0	27.9	24.8	23.4	12.7	10.6	33.6	41.3	21.9	9.70	170
MAX	121	585	40	55	52	43	37	118	111	171	24	1770
MIN	26	28	22	19	17	8.3	7.2	7.9	13	9.5	5.7	14
CFSM	.78	1.36	.51	.45	.42	.23	.19	.61	.75	.40	.18	3.08
IN.	.90	1.54	.58	.52	.46	.26	.21	.70	.83	.46	.20	3.43
AC-FT	2640	4520	1720	1520	1350	779	631	2070	2460	1350	596	10110

CAL YR 1983 TOTAL 29129.0 MEAN 79.8 MAX 2780 MIN 22 CFSM 1.45 IN 19.63 AC-FT 57780
WTR YR 1984 TOTAL 14990.7 MEAN 41.0 MAX 1770 MIN 5.7 CFSM .74 IN 10.10 AC-FT 29730

RIO GRANDE DE MANATI BASIN

50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983 13...	1515	32	273	8.5	29.0	15	7.8	103	<10	500	730
DEC 09...	1240	27	288	8.4	24.0	5.6	9.9	107	<10	K80	K150
MAR , 1984 07...	1245	11	284	8.6	26.0	3.1	15.2	190	10	K38	K26
MAY 07...	1550	9.4	295	8.9	29.0	3.0	10.9	144	<10	98	K27
JUN 14...	1325	28	279	8.4	30.0	25	9.4	127	<10	K890	260
AUG 03...	1145	13	283	8.4	28.5	5.2	9.2	120	<10	84	250

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983 13...	110	0	26	10	12	.5	1.6	108	8.3	15	.20
DEC 09...	--	--	--	--	--	--	--	116	--	--	--
MAR , 1984 07...	--	--	--	--	--	--	--	121	--	--	--
MAY 07...	120	0	28	11	14	.6	1.8	122	11	13	.20
JUN 14...	--	--	--	--	--	--	--	107	--	--	--
AUG 03...	110	0	27	11	13	.5	1.7	119	9.1	16	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983 13...	28	170	14	2	--	<.01	.20	.04	.16	.20	.40
DEC 09...	--	--	--	21	.59	.01	.60	.08	--	<.10	--
MAR , 1984 07...	--	--	--	6	--	<.01	<.10	<.01	--	.80	--
MAY 07...	27	180	4.5	6	--	<.01	<.10	.08	.52	.60	--
JUN 14...	--	--	--	28	.39	.01	.40	<.01	--	.20	.60
AUG 03...	26	180	5.7	12	--	<.01	<.10	.06	.24	.30	--

K = non-ideal count

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50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
13...	1.8	.10	1	<100	<1	10	2	<.1	<1	<1
DEC										
09...	--	.09	--	--	--	--	--	--	--	--
MAR , 1984										
07...	--	.05	--	--	--	--	--	--	--	--
MAY										
07...	--	.13	2	<100	1	<1	1	<.1	<1	<1
JUN										
14...	2.7	.08	--	--	--	--	--	--	--	--
AUG										
03...	--	.07	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
JAN, 01	1420	27	278	26.0	JUL, 12	1506	17	268	30.0
FEB, 22	1354	20	242	25.5	SEP. 10	1058	14	270	27.0
APR. 30	1449	13	260	23.0					

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RIO GRANDE DE MANATI BASIN

50035000 RIO GRANDE DE MANATI AT CIALES, PR

LOCATION.--Lat 18°19'26", long 66°27'36", hydrologic Unit 21010001, on left bank, 1.6 mi (2.6 km) upstream from Hwy 145 bridge, 0.8 mi (1.3 km) downstream from Quebrada Saliente, 0.9 mi (1.4 km) upstream from Quebrada Cojo Valés, and 1.2 mi (1.9 km) southeast of Ciales.

DRAINAGE AREA.--128 sq mi (332 sq km), excludes 6.0 sq mi (15.5 sq km), the runoff from which is diverted through Guineo and de Matrullas reservoirs.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1946 to September 1953, May 1956 to December 1957 (unpublished, available in files of Caribbean District Office and in the National Water Data Storage and Retrieval System, Washington, D.C.); February 1959 to September 1960 (monthly discharge measurements only); October 1960 to current year.

Equivalent record from January 1971 to December 1972 published as 50035200 Río Grande de Manatí at Highway 145 at Ciales at site 1.6 mi (2.6 km) downstream, drainage area 132 sq mi (342 sq km).

GAGE.--Water-stage recorder. Altitude of gage is 140 ft (42.7 m), from topographic map. Prior to Apr. 1, 1962 , staff gage, read twice daily, at site 100 ft (30.5 m) upstream at same datum. January 1971 to December 1972 at site 1.6 mi (2.6 km) downstream at different datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--24 years (1961-84), 256 cu ft/s (7.250 cu m/s), 27.16 in/yr (690 mm/yr), 185,500 acre-ft/yr (229 cu hm/yr); median of yearly mean discharges, 251 cu ft/s (7.11 cu m/s), 182,000 acre-ft/yr (224 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 125,000 cu ft/s (3,540 cu m/s) Oct. 9, 1970, gage height, 24.0 ft (7.32 m), from floodmark, from rating curve extended above 3,000 cu ft/s (85.0 cu m/s) on basis of slope-area measurements of peak flow at gage heights 13.2 ft (4.02 m), 15.0 ft (4.57 m), 19.0 ft (5.79 m), and 24.0 ft (7.32 m), datum then in use; minimum, 20 cu ft/s (0.566 cu m/s) Apr. 20,21, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate gage heights of major floods, pointed out by local residents are as follows: August 1899, 50 ft (15.2 m), September 1928, 36 ft (11.0 m), and September 1932, 34 ft (10.4 m) at site 1.6 mi (2.6 km) upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,000 cu ft/s (198 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 11	1815	*18,900	535	10.43	3.179	Sept. 17	1730	11,400	323	8.26	2.524

Minimum discharge, 20 cu ft/s (0.566 cu m/s) Apr. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	85	67	69	40	51	29	28	53	44	27	64
2	50	79	84	59	40	43	31	28	39	44	30	194
3	54	81	93	55	38	34	28	28	51	44	31	420
4	71	1770	72	55	38	33	43	29	191	47	28	382
5	101	1190	68	145	43	32	33	28	338	219	34	301
6	69	426	74	81	41	31	28	28	346	205	32	373
7	72	270	72	70	38	32	25	27	200	98	27	140
8	63	203	67	65	38	30	24	27	211	67	25	73
9	71	159	66	125	65	30	25	28	125	56	24	52
10	65	397	61	96	61	30	24	27	95	52	22	518
11	96	467	66	75	126	30	24	25	77	48	21	2310
12	114	368	64	67	86	30	26	28	66	47	21	882
13	74	183	61	64	62	30	25	40	54	40	34	458
14	65	147	61	104	58	31	31	89	70	42	40	444
15	263	126	58	69	50	31	29	44	48	45	31	250
16	161	108	55	67	49	32	23	156	42	40	109	506
17	399	93	55	59	53	35	22	129	50	36	38	2280
18	505	139	55	52	46	35	22	274	72	34	28	1610
19	299	103	57	51	43	32	22	266	119	51	23	1590
20	546	87	98	50	42	32	21	202	128	39	21	1050
21	544	83	116	49	41	90	20	69	296	37	21	932
22	977	88	70	47	39	37	23	94	368	36	29	416
23	583	78	64	47	38	32	23	85	135	36	26	255
24	272	75	61	47	36	31	23	139	85	34	21	197
25	140	75	57	48	36	28	22	84	66	31	31	148
26	117	72	56	49	36	28	27	69	60	33	40	144
27	93	67	58	47	36	81	36	96	56	36	114	111
28	85	67	57	44	36	46	58	81	52	29	43	87
29	80	67	63	44	35	33	54	57	47	42	27	108
30	86	65	65	44	---	30	34	55	47	37	22	102
31	121	---	68	42	---	30	---	72	---	30	21	---
TOTAL	6300	7218	2089	1986	1390	1130	855	2430	3587	1679	1041	16397
MEAN	203	241	67.4	64.1	47.9	36.5	28.5	78.4	120	54.2	33.6	547
MAX	977	1770	116	145	126	90	58	274	368	219	114	2310
MIN	50	65	55	42	35	28	20	25	39	29	21	52
CFSM	1.59	1.88	.53	.50	.37	.29	.22	.61	.94	.42	.26	4.27
IN.	1.83	2.10	.61	.58	.40	.33	.25	.71	1.04	.49	.30	4.77
AC-FT	12500	14320	4140	3940	2760	2240	1700	4820	7110	3330	2060	32520

CAL YR 1983 TOTAL 84572 MEAN 232 MAX 8390 MIN 50 CFSM 1.81 IN 24.58 AC-FT 163700
WTR YR 1984 TOTAL 46102 MEAN 126 MAX 2310 MIN 20 CFSM .98 IN 13.40 AC-FT 9[illegible]

50035000 RIO GRANDE DE MANATI AT CIALES, PR—Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS 1973 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT., 03	1317	53	229	30.0	APR., 11	1041	24	259	27.0
NOV., 16	1445	102	229	29.0	APR., 30	1146	33	253	26.5
DEC., 14	1516	60	262	26.5	JUN., 11	1310	72	239	28.5
JAN., 11	0954	74	205	25.0	AUG., 03	1039	33	276	28.0
MAR., 15	1107	31	250	24.5	SEP., 10	1620	43	277	31.0

RIO GRANDE DE MANATI BASIN

50035500 RIO GRANDE DE MANATI AT HIGHWAY 149 AT CIALES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'46", long 66°28'06", at bridge on Highway 149, about 800 ft (244 m) upstream from confluence with Río Cialitos, 0.5 mi (0.8 km) north of Ciales plaza.

DRAINAGE AREA.--136 sq mi (352 sq km) this excludes the 6 sq mi (15.5 sq km) upstream from Lago El Guineo and Lago de Matrullas, flow from which is diverted to Río Jacaguas.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV , 1983 01...	1230	80	233	9.1	26.0	15	9.0	111	16	600	250
DEC 27...	1300	57	248	7.9	25.0	13	8.6	106	32	540	K150
MAR , 1984 05...	1020	38	250	8.5	25.0	6.1	9.8	119	13	K110	K90
APR 30...	1330	36	268	8.7	27.5	2.4	13.1	166	<10	K20	K30
JUN 15...	1215	56	262	8.5	29.5	12	3.5	112	<10	K110	270
AUG 02...	1230	3,	268	8.4	28.0	9.0	9.5	121	10	210	220

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
NOV , 1983 01...	90	0	23	8.0	11	.5	1.7	90	10	13	.40
DEC 27...	--	--	--	--	--	--	--	96	--	--	--
MAR , 1984 06...	--	--	--	--	--	--	--	102	--	--	--
APR 30...	110	0	26	9.9	14	.6	1.7	124	13	14	.10
JUN 15...	--	--	--	--	--	--	--	103	--	--	--
AUG 02...	100	0	25	9.1	12	.5	1.7	105	12	14	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
NOV , 1983 01...	25	150	32	10	.28	.02	.30	.14	4.3	4.4	4.7
DEC 27...	--	--	--	3	--	<.01	.40	.02	1.1	1.1	1.5
MAR , 1984 05...	--	--	--	5	--	<.01	<.10	<.01	--	.50	--
APR 30...	27	180	15	2	--	<.01	<.10	.09	.31	.40	--
JUN 15...	--	--	--	--	.29	.01	.30	.04	--	<.10	--
AUG 02...	25	160	16	8	--	<.01	<.10	.02	.58	.60	--

K = non-ideal count

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50035500 RIO GRANDE DE MANATI AT HIGHWAY 149 AT CIALES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
NOV , 1983										
01...	21	.08	1	<100	1	4	1	<.1	<1	<1
DEC										
27...	6.6	.07	--	--	--	--	--	--	--	--
MAR , 1984										
06...	--	.06	--	--	--	--	--	--	--	--
APR										
30...	--	.11	1	<100	1	<1	1	<.1	<1	<1
JUN										
15...	--	.08	--	--	--	--	--	--	--	--
AUG										
02...	--	.07	--	--	--	--	--	--	--	--

50035950 RIO CIALITOS AT HIGHWAY 649 AT CIALES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'18", long 66°28'28", 100 ft (30 m) upstream from bridge on Highway 649, 0.7 mi (1.1 km) upstream from mouth, and about 0.4 mi (0.6 km) west of Ciales plaza.

DRAINAGE AREA.--17.0 sq mi (44.0 sq km).

PERIOD OF RECORD.--Water years 1969-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV , 1983 01...	0945	17	218	8.1	23.0	6.7	8.6	101	21	K730	850
DEC 27...	1042	13	254	7.8	22.0	12	8.5	98	13	460	500
MAR , 1984 06...	1325	6.5	235	8.6	24.0	6.0	10.5	125	10	2400	280
APR 30...	1715	3.9	235	8.8	27.0	3.6	12.4	156	<10	K1060	K1760
JUN 15...	1730	8.9	258	8.4	29.0	20	7.3	95	<10	2600	9100
AUG 02...	1600	5.8	283	8.6	27.0	17	9.9	124	<10	2000	4800

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
NOV , 1983 01...	86	1	25	5.7	10	.5	1.7	85	7.4	10	.20
DEC 27...	--	--	--	--	--	--	--	100	--	--	--
MAR , 1984 06...	--	--	--	--	--	--	--	103	--	--	--
APR 30...	95	0	27	6.6	11	.5	1.5	98	7.0	11	.10
JUN 15...	--	--	--	--	--	--	--	106	--	--	--
AUG 02...	110	0	31	7.1	12	.5	1.6	113	9.1	13	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
NOV , 1983 01...	26	140	6.3	8	.79	.01	.80	.16	1.3	1.5	2.3
DEC 27...	--	--	--	2	--	<.01	1.0	<.01	--	.50	1.5
MAR , 1984 06...	--	--	--	6	--	<.01	.50	.04	.46	.50	1.0
APR 30...	30	150	1.6	5	--	<.01	.30	.15	.15	.30	.60
JUN 15...	--	--	--	26	.39	.01	.40	.02	.18	.20	.60
AUG 02...	29	170	2.7	30	.19	.01	.20	.04	.26	.30	.50

K = non-ideal count

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50035950 RIO CIALITOS AT HIGHWAY 649 AT CIALES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
NOV , 1983										
01...	10	.07	1	<100	1	5	2	<.1	<1	<1
DEC										
27...	6.6	.09	--	--	--	--	--	--	--	--
MAR , 1984										
06...	4.6	.09	--	--	--	--	--	--	--	--
APR										
30...	2.7	.09	1	<100	1	2	2	<.1	<1	<1
JUN										
15...	2.7	.25	--	--	--	--	--	--	--	--
AUG										
02...	2.2	.09	--	--	--	--	--	--	--	--

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR

LOCATION.--Lat 18°25'52", long 66°31'37", Hydrologic Unit 21010002, at bridge on Highway 2, and 2.3 mi (3.7 km) west of Manati.

DRAINAGE AREA.--197 sq mi (510 sq km), approximately, of which about 38 sq mi (98 sq km) is partly or entirely noncontributing, excludes 6.0 sq mi (15.5 sq km) upstream from Lago El Guineo and Lago de Matrullas.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1963-68 (annual maximum discharge only), February 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 14 ft (4.3 m), from topographic map. Prior to 1968 crest-stage gage at same site and datum 3.57 ft (1.088 m) lower.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--14 years (1971-84), 362 cu ft/s (10.25 cu m/s), 24.95 in/yr (634 mm/yr), 262,300 acre-ft/yr (323 cu hm/yr); median of yearly mean discharges, 312 cu ft/s (8.84 cu m/s), 226,000 acre-ft/yr (279 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 119,000 cu ft/s (3,370 cu m/s) Oct. 9, 1970, gage height, 33.3 ft (10.15 m) from rating curve extended above 15,000 cu ft/s (425 cu m/s) on basis of slope-area measurement of peak flow; minimum, 33 cu ft/s (0.935 cu m/s) May 12, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate gage heights to gage datum of major floods, pointed out by local residents, are as follows: Sept. 13, 1928, 36.6 ft (11.16 m), Sept. 27, 1932, 36.3 ft (11.06 m), and Aug. [illegible], 1945, 34.3 ft (10.45 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 cu ft/s (255 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 11	2315	*8,550	242	27.36	8.339

Minimum discharge, 33 cu ft/s (0.935 cu m/s) May 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	142	121	112	92	70	49	56	111	73	55	60
2	123	122	127	103	92	138	53	59	85	70	57	155
3	113	118	149	99	82	73	51	52	92	69	60	293
4	116	1300	123	95	81	67	52	46	188	69	58	633
5	152	2290	115	136	81	66	69	43	616	97	58	469
6	149	605	121	140	84	63	50	47	652	282	62	600
7	161	389	122	115	91	62	45	41	463	125	57	242
8	178	315	111	107	81	61	46	40	397	87	53	128
9	168	242	108	158	91	61	46	39	245	76	51	91
10	139	324	106	145	119	61	46	39	196	68	51	141
11	164	799	111	124	158	61	45	37	154	66	50	1960
12	200	629	110	112	178	62	45	34	140	71	47	2130
13	161	369	103	105	115	61	50	37	120	65	48	494
14	141	260	100	150	105	60	51	98	128	62	66	601
15	250	225	97	125	95	61	107	95	108	75	72	344
16	458	198	96	108	89	60	70	60	93	66	142	407
17	[illegible]	177	99	106	96	64	56	325	93	61	112	1890
18	805	210	101	94	87	65	48	201	92	59	68	2970
19	824	185	100	92	79	63	45	562	218	63	59	2300
20	613	161	96	90	77	59	45	427	339	69	55	1100
21	666	153	319	90	74	123	42	180	213	63	56	1220
22	944	156	153	88	70	86	43	192	632	62	61	614
23	1090	142	126	85	66	66	43	166	239	60	100	424
24	424	140	117	85	66	62	44	193	152	59	59	344
25	261	139	110	92	65	60	45	245	117	59	56	274
26	203	134	106	88	64	55	46	256	100	55	78	257
27	152	127	106	94	64	82	74	141	94	55	141	291
28	137	124	103	82	64	87	128	211	86	59	108	199
29	175	121	106	82	65	59	176	129	80	65	65	236
30	124	123	113	82	---	51	96	106	77	65	55	215
31	185	---	120	82	---	49	---	135	---	59	50	---
TOTAL	9702	10419	3695	3266	2541	2119	1803	4295	6320	2332	2106	21083
MEAN	313	347	119	105	87.6	68.4	60.1	139	211	75.2	67.9	703
MAX	1090	2290	319	158	178	138	176	562	652	282	142	2970
MIN	113	118	96	82	64	49	42	34	77	55	47	60
CFSM	1.59	1.76	.60	.53	.45	.35	.31	.71	1.07	.38	.35	3.57
IN.	1.83	1.97	.70	.62	.48	.40	.34	.81	1.19	.44	.40	3.98
AC-FT	19240	20670	7330	6480	5040	4200	3580	8520	12540	4630	4180	41820

CAL YR 1983 TOTAL 116561 MEAN 314 MAX 12200 MIN 90 CFSM 1.59 IN 21.63 AC-FT 227200
WTR YR 1984 TOTAL 69681 MEAN 190 MAX 2970 MIN 34 CFSM .96 IN 13.16 AC-FT 138200

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50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT , 1983 04...	1130	108	286	8.0	29.0	6.0	7.5	101	26	K1300	550	130
DEC 08...	1405	112	312	7.9	25.5	6.1	8.3	103	<10	2200	3200	130
FEB , 1984 10...	1230	119	304	7.8	24.0	2.0	7.5	90	18	K15000	K230000	130
APR 18...	1120	43	319	7.8	27.0	2.5	8.6	108	<10	2600	2200	150
JUN 08...	1340	396	220	7.6	27.0	110	6.4	80	13	K11000	5200	110
AUG 02...	1120	57	300	7.9	23.0	5.5	9.1	103	--	2400	4900	140

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT , 1983 04...	0	41	7.8	11	.4	1.3	136	8.5	13	.10	22	186
DEC 08...	0	40	7.4	11	.4	1.5	130	9.0	13	<.10	20	190
FEB , 1984 10...	1	40	7.5	11	.4	2.1	130	7.8	13	.10	17	187
APR 18...	1	46	7.8	11	.4	2.3	146	8.1	13	.10	15	208
JUN 08...	12	33	5.6	9.1	.4	2.6	95	14	12	.10	14	191
AUG 02...	0	43	7.3	10	.4	1.5	138	9.4	13	.20	16	200

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS TOTAL (MG/L AS PO4)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
OCT , 1983 04...	190	56	8	2.1	1.2	1.5	1.8	.12	.37	.08	1.4
DEC 08...	180	57	34	.71	.10	.13	<.10	.11	.34	.07	.09
FEB , 1984 10...	180	60	14	.52	.33	.43	.90	.39	1.2	.22	.19
APR 18...	190	27	10	.31	.53	.68	2.1	.32	.98	.29	.26
JUN 08...	150	203	148	1.4	.16	.21	1.1	.23	--	.15	.13
AUG 02...	180	31	184	.42	.04	.05	.40	.08	--	.05	.06

K = non-ideal count

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50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
OCT , 1983											
04...	4.3	<10	2	55	1	<1	<1	<3	1	13	1
DEC											
08...	.28	--	--	--	--	--	--	--	--	--	--
FEB , 1984											
10...	.59	10	1	50	<.5	<1	<1	<3	2	11	3
APR											
18...	.80	--	--	--	--	--	--	--	--	--	--
JUN											
08...	.40	70	1	65	<.0	<1	<1	<3	9	32	4
AUG											
02...	.18	<10	1	52	<.0	<1	<1	<3	1	9	<1

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
OCT , 1983											
04...	<6	22	<.1	<10	1	<1	<1	210	<6	23	6.7
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
FEB , 1984											
10...	<6	30	<.1	<10	2	<1	<1	190	8	72	23
APR											
18...	--	--	--	--	--	--	--	--	--	35	4.5
JUN											
08...	<6	15	<.1	<10	1	<1	2	150	<6	175	186
AUG											
02...	<6	23	.3	<10	2	<1	<1	220	10	214	33

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT, 26	1130	196	228	28.0	MAR, 16	1028	61	308	26.0
NOV, 28	1530	121	238	27.5	MAR, 28	1108	87	322	27.0
DEC, 27	1250	104	299	27.0	APR, 26	1039	46	313	27.5
JAN, 25	1314	90	293	27.0	MAY, 30	1027	106	282	27.0
FEB, 23	1504	66	328	27.0	JUN, 25	1500	110	278	31.0

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JUN , 1984								
08...	1340	<.1	<.01	<.1	<.01	<.01	<.01	.06

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
JUN , 1984									
08...	<.01	<.01	<.01	<.01	<.01	<.01	<.11	<.01	<.01

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)
JUN , 1984								
08...	<.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

RIO GRANDE DE MANATI BASIN

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT , 1983				
04...	1130	139	23	93
DEC				
03...	1405	112	--	--
FEB , 1984				
10...	1135	119	72	59
APR				
19...	1120	49	35	94
JUN				
08...	1340	395	175	95
AUG				
02...	1120	57	214	99

50038200 LAGUNA TORTUGUERO OUTLET NEAR VEGA BAJA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°28'29", long 66°26'50", at bridge on Highway 686, 4.2 mi (6.8 km) northeast of Manatí, and 4.4 mi (7.1 km) northwest of Vega Baja plaza.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1964-66, 1969-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY FIELD (MG/L AS CACO3)
OCT , 1983											
06...	1400	16	1360	8.0	31.5	8.2	112	71	K3	830	120
DEC											
14...	1315	16	1830	8.0	28.0	9.0	115	21	K2	K3	139
MAR , 1984											
09...	1320	11	1760	8.3	27.0	13.8	173	29	290	K19	130
MAY											
03...	1050	6.6	2150	8.3	28.0	9.2	119	32	74	49	124
JUN											
13...	1645	17	1870	8.3	31.0	10.3	139	33	K9	32	93
AUG											
01...	1620	13	1950	8.4	29.0	9.4	123	25	32	55	97

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)
OCT , 1983										
06...	10	.68	.02	.70	.42	.88	1.3	2.0	8.9	.01
DEC										
14...	6	.59	.02	.63	.34	1.2	1.5	2.1	9.3	.03
MAR , 1984										
09...	10	--	<.01	.70	.31	1.5	1.8	2.5	11	<.01
MAY										
03...	5	.58	.02	.60	.35	1.1	1.4	2.0	8.9	<.01
JUN										
13...	8	.48	.02	.50	.17	1.5	1.7	2.2	9.7	.01
AUG										
01...	6	.39	.010	.40	.100	1.0	1.1	1.5	6.6	<.01

K = non-ideal count

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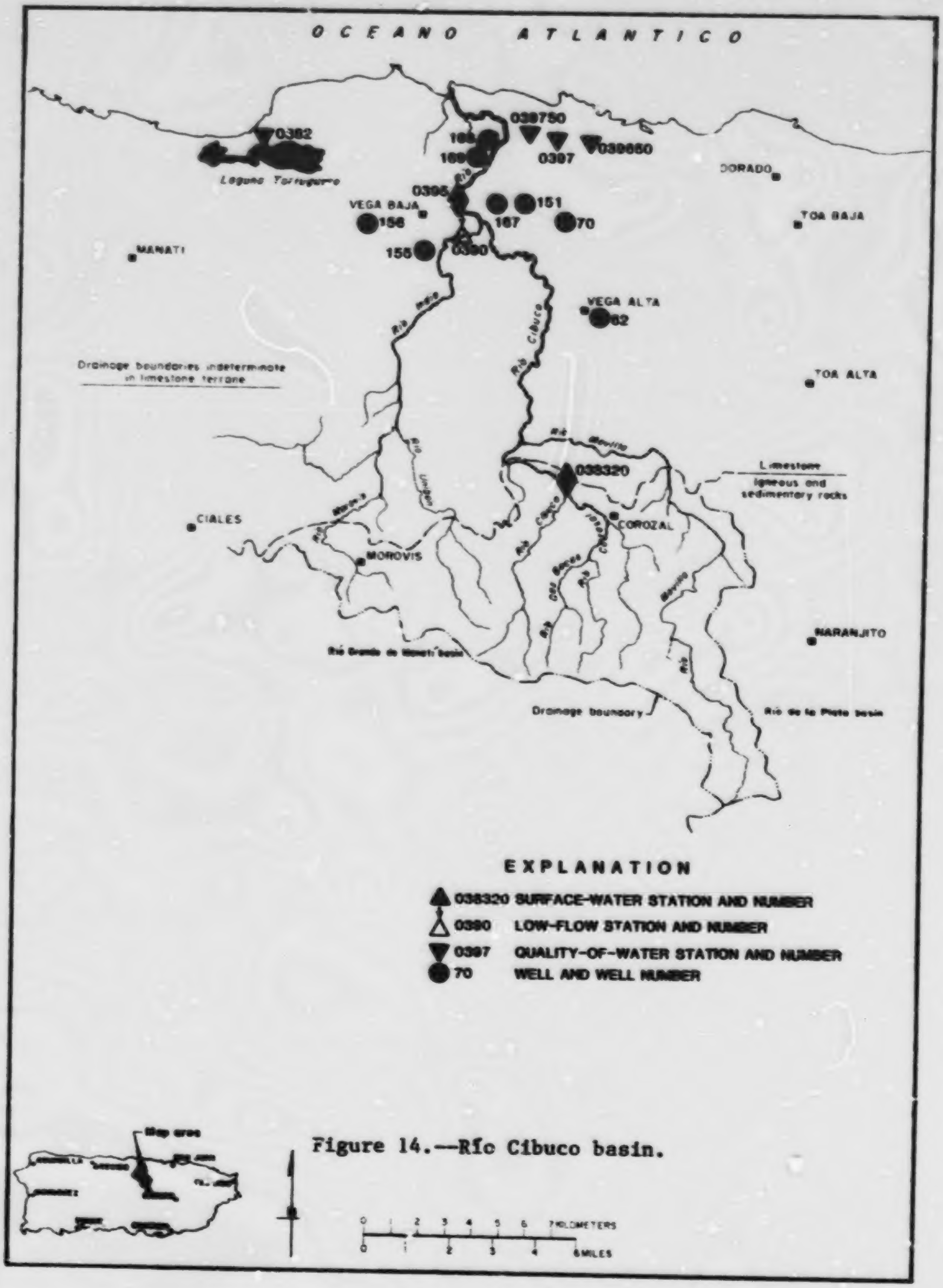
OCEANO ATLANTICO
0382
Laguna Tortuguero
038750
168
169
0397
039650
DORADO
0395
VEGA BAJA
151
156
167
70
TOA BAJA
155
0390
MANATI
Río Indio
Río Cibuco
VEGA ALTA
62
Drainage boundaries indeterminate in limestone terrane
TOA ALTA
Río Mavilla
038320
Limestone
Igneous and sedimentary rocks
Río Unibón
CIALES
Río Morovis
COROZAL
MOROVIS
Río Dos Bocas
Río Corozal
Mavilla
NARANJITO
Río Grande de Manatí basin
Río
Drainage boundary
Río de la Plata basin
EXPLANATION
038320 SURFACE-WATER STATION AND NUMBER
0390 LOW-FLOW STATION AND NUMBER
0397 QUALITY-OF-WATER STATION AND NUMBER
70 WELL AND WELL NUMBER
Map area
0 1 2 3 4 5 6 7 KILOMETERS
0 1 2 3 4 5 MILES

Figure 14.--Río Cibuco basin.

RIO CIBUCO BASIN

50038320 RIO CIBUCO BELOW COROZAL, PR

LOCATION.--Lat 18°21'13", long 66°20'07", Hydrologic Unit 21010001, on right bank, 150 ft (46 m) downstream from Río Corozal, and 1.4 mi (2.3 km) northwest of Corozal.

DRAINAGE AREA.--15.1 sq mi (39.1 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 195 ft (59.4 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--15 years (1970-84), 28.3 cu ft/s (0.801 cu m/s), 25.45 in/yr (646 mm/yr), 20,500 acre-ft/yr (25.3 cu hm/yr); median of yearly mean discharges, 30 cu ft/s (0.85 cu m/s), 21,700 acre-ft/yr (27 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 cu ft/s (385 cu m/s) Nov. 7, 1979, gage height, 19.80 ft (6.025 m), from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of float and slope-area measurements of peak flow; minimum daily discharge, 1.3 cu ft/s (0.037 cu m/s) July 2?-26, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 cu ft/s (70.8 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 22	1500	2,820	79.9	11.23	3.423	Sept. 11	1545	*9,790	277	17.86	5.444

Minimum discharge, 2.3 cu ft/s (0.065 cu m/s) May 11-13, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	23	14	12	7.0	5.3	3.4	3.6	4.5	3.2	4.5	5.0
2	11	20	25	12	6.8	5.1	3.2	3.7	3.8	3.1	12	3.7
3	11	22	16	11	6.6	4.8	3.3	3.8	5.4	3.4	5.7	3.6
4	13	244	15	11	7.0	4.6	3.4	3.5	7.8	3.2	7.3	4.6
5	11	70	17	11	6.0	4.7	3.2	3.5	13	55	6.9	86
6	10	35	23	11	6.2	4.8	3.1	3.5	18	8.0	6.9	25
7	10	26	16	11	5.8	4.5	3.1	3.7	12	4.6	4.2	8.7
8	10	22	16	11	5.8	4.4	3.0	3.6	9.8	3.6	3.8	6.1
9	10	20	15	12	8.4	4.4	3.1	3.5	6.1	3.5	3.9	5.4
10	9.9	20	15	12	13	4.4	3.1	3.5	5.0	3.6	3.9	13
11	10	90	15	11	29	4.4	3.0	3.0	6.0	4.3	3.5	641
12	12	35	14	12	11	4.8	3.1	2.3	5.7	4.6	3.4	22
13	14	22	14	11	11	5.3	3.1	2.4	5.4	3.4	3.6	22
14	12	19	14	11	8.5	4.9	3.4	6.0	6.3	9.1	3.5	33
15	11	19	14	9.8	9.8	4.4	3.1	2.9	4.1	6.5	3.4	20
16	11	18	13	9.1	17	4.3	3.0	2.5	11	3.8	3.3	18
17	116	17	14	9.1	8.2	5.1	3.0	6.6	7.9	3.0	4.0	69
18	32	17	14	9.8	6.9	5.2	3.0	5.0	5.1	2.8	3.2	84
19	24	16	13	9.4	6.0	4.5	3.0	8.1	4.9	8.3	3.5	59
20	18	16	13	9.2	6.3	4.7	3.0	7.1	4.7	4.5	3.3	30
21	25	16	13	8.8	6.1	4.3	3.1	9.2	4.1	4.2	3.5	19
22	189	16	13	8.3	5.7	3.9	3.3	6.2	4.4	3.6	4.2	15
23	65	16	13	8.3	5.5	3.8	3.3	4.4	4.0	4.2	3.5	29
24	25	15	12	8.7	5.7	3.5	3.4	6.9	3.5	4.3	3.5	31
25	22	16	11	10	5.4	3.6	3.3	5.8	3.4	3.5	8.0	15
26	18	15	12	8.6	5.6	3.7	3.3	6.8	3.1	5.1	12	12
27	17	15	12	7.9	4.8	4.3	3.6	4.5	3.0	3.6	5.8	12
28	16	14	12	7.6	4.9	4.0	6.8	3.6	3.1	16	4.1	12
29	29	15	12	7.2	5.1	3.5	3.5	3.7	3.4	9.1	3.5	9.3
30	61	16	15	6.8	---	3.1	3.3	12	3.5	4.8	3.5	9.1
31	39	---	21	7.2	---	3.1	---	6.2	---	3.7	3.7	---
TOTAL	833.9	923	456	304.8	235.1	135.3	99.5	151.1	182.0	205.6	147.1	1322.5
MEAN	26.9	30.8	14.7	9.83	8.11	4.36	3.32	4.87	6.07	6.63	4.75	44.1
MAX	189	244	25	12	29	5.3	6.8	12	18	55	12	641
MIN	9.9	14	11	6.8	4.8	3.1	3.0	2.3	3.0	2.8	3.2	3.6
CFSM	1.78	2.04	.97	.65	.54	.29	.22	.32	.40	.44	.32	2.92
IN.	2.05	2.27	1.12	.75	.58	.33	.25	.37	.45	.51	.36	3.26
AC-FT	1650	1830	904	605	466	268	197	300	361	408	292	2620

CAL YR 1983 TOTAL 8880.8 MEAN 24.3 MAX 492 MIN 6.0 CFSM 1.61 IN 21.88 AC-FT 17620
WTR YR 1984 TOTAL 4995.9 MEAN 13.7 MAX 641 MIN 2.3 CFSM .91 IN 12.31 AC-FT 9910

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RIO CIBUCO BASIN

50038320 RIO CIBUCO BELOW COROZAL, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-76, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
11...	1100	10	370	8.0	25.5	4.5	7.7	95	23	370	440
DEC											
07...	1015	16	352	8.0	22.0	4.1	7.2	83	10	35000	20000
MAR , 1984											
09...	1535	4.8	414	8.0	26.0	4.5	8.4	105	25	340	700
APR											
19...	1550	2.9	506	7.7	29.5	2.1	5.2	69	23	K860	970
JUN											
21...	1025	4.1	423	7.4	26.5	1.4	4.3	54	23	K800	300
AUG											
08...	1120	3.7	539	7.6	28.0	1.8	5.6	71	13	K1200	910

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
11...	130	7	33	12	19	.7	2.9	125	17	25	.20
DEC											
07...	--	--	--	--	--	--	--	125	--	--	--
MAR , 1984											
09...	--	--	--	--	--	--	--	131	--	--	--
APR											
19...	160	0	44	12	33	1	4.0	173	25	41	.30
JUN											
21...	--	--	--	--	--	--	--	166	--	--	--
AUG											
08...	170	0	46	13	28	1	4.3	183	21	33	.30

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
11...	34	218	5.9	4	1.2	.36	1.6	.63	.27	.9	2.5
DEC											
07...	--	--	--	8	.99	.11	1.1	1.1	1.3	2.4	3.5
MAR , 1984											
09...	--	--	--	7	.56	.14	.70	3.9	2.0	5.9	6.6
APR											
19...	33	290	2.3	8	.74	.36	1.1	4.5	1.5	6.0	7.1
JUN											
21...	--	--	--	4	.22	.08	.30	3.6	.30	3.9	4.2
AUG											
08...	30	265	2.9	6	.81	.59	1.4	5.2	1.8	7.0	8.4

K = non-ideal count

RIO CIBUCO BASIN

50038320 RIO CIBUCO BELOW COROZAL, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
11...	11	.65	3	<100	1	6	1	<.1	<1	<1
DEC										
07...	15	.47	--	--	--	--	--	--	--	--
MAR , 1984										
09...	29	.31	--	--	--	--	--	--	--	--
APR										
19...	31	1.0	2	<100	1	5	1	2.8	<1	<1
JUN										
21...	19	1.2	--	--	--	--	--	--	--	--
AUG										
08...	37	1.5	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
NOV, 15	1115	20	388	25.0
JAN, 12	1320	12	405	26.5
FEB, 28	1230	5.9	312	26.0
MAY, 24	1046	7.4	375	26.5
SEP, 11	1032	14	320	25.0

RIO CIBUCO BASIN

50039500 RIO CIBUCO AT VEGA BAJA, PR

LOCATION.--Lat 18°26'53", long 66°22'29", Hydrologic Unit 21010002, 0.6 mi (1.0 km) downstream from Río Indio, and 0.8 mi (1.3 km) east of Vega Baja.

DRAINAGE AREA.--99.1 sq mi (256.7 sq km), of which 25.4 sq mi (65.8 sq km), does not contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 7.79 ft (2.374 m) above mean sea level.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--11 years (1974-84), 119 cu ft/s (3.370 cu m/s), 16.31 in/yr (414 mm/yr), 86,220 acre-ft/yr (106 cu hm/yr); median of yearly mean discharges, 114 cu ft/s (3.228 cu m/s), 82,600 acre-ft/yr (102 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,300 cu ft/s (858 cu m/s) Dec. 13, 1981, gage height, 18.84 ft (5.742 m), from rating curve extended above 3,000 cu ft/s) (85 cu m/s) on the basis of indirect measurements; minimum, 6.1 cu ft/s (0.173 cu m/s) July 24,25, 1977, gage height, 5.04 ft (1.536 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 11, 1965 reached a stage of 26.2 ft (7.99 m), datum unknown, discharge about 28,000 cu ft/s (793 cu m/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,200 cu ft/s (90.6 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 11	2230	*2,210	62.6	13.30	4.054

Minimum discharge, 8.8 cu ft/s (0.249 cu m/s) May 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	52	48	61	31	27	17	14	24	27	21	18
2	50	43	60	42	31	28	17	15	19	27	51	20
3	46	39	65	38	30	28	16	14	17	25	43	18
4	48	551	47	37	29	27	16	12	29	27	34	20
5	43	600	46	38	51	27	17	11	214	224	51	32
6	40	190	62	38	30	27	17	11	703	107	33	297
7	38	125	54	35	29	25	15	12	290	48	27	54
8	38	98	46	34	29	24	14	13	216	35	25	29
9	38	86	49	32	32	26	14	14	94	30	23	22
10	39	77	44	3"	55	24	16	13	59	30	21	19
11	41	123	47	37	132	25	15	13	48	30	20	461
12	44	201	45	36	87	25	15	14	52	34	19	858
13	75	88	42	40	79	26	15	16	56	29	19	177
14	76	71	40	39	79	29	15	18	100	30	19	174
15	52	65	40	38	67	27	13	36	56	63	19	108
16	53	61	40	36	80	26	15	24	115	33	19	78
17	107	57	42	35	53	27	15	103	191	25	46	452
18	319	57	46	36	38	27	15	76	67	26	23	598
19	63	54	42	36	33	25	14	135	54	64	24	302
20	59	52	40	35	31	24	17	58	77	115	18	207
21	49	49	44	35	30	24	19	34	71	34	19	134
22	255	51	41	32	29	23	19	40	117	30	25	94
23	220	49	41	33	28	22	18	30	59	39	26	70
24	65	49	39	34	28	22	17	25	45	27	23	104
25	61	50	37	39	28	20	17	63	38	23	20	63
26	45	48	40	37	28	19	16	169	35	20	94	52
27	37	46	46	34	27	21	17	75	32	22	42	49
28	33	45	38	32	26	22	21	28	30	19	29	54
29	37	44	41	31	26	20	21	36	28	56	22	59
30	58	48	43	30	---	20	14	52	28	29	20	95
31	113	---	84	30	---	18	---	45	---	22	18	---
TOTAL	2293	3165	1437	1125	1236	753	487	1219	3046	1346	853	5010
MEAN	74.0	106	46.4	36.3	42.6	24.3	16.2	39.3	102	43.4	27.5	167
MAX	319	600	84	61	132	29	21	169	703	224	94	858
MIN	33	39	37	30	26	18	14	11	17	19	18	18
CFSM	.75	1.07	.47	.37	.43	.25	.16	.40	1.03	.44	.28	1.69
IN.	.86	1.19	.54	.42	.46	.28	.18	.46	1.14	.51	.32	1.88
AC-FT	4550	4280	2850	2230	2450	1490	966	2420	6040	2670	1690	9960

CAL YR 1983 TOTAL 33638 MEAN 92.2 MAX 1780 MIN 21 CFSM .93 IN 12.63 AC-FT 66720
WTR YR 1984 TOTAL 21970 MEAN 60.0 MAX 858 MIN 11 CFSM .61 IN 8.25 AC-FT 43580

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RIO CIBUCO BASIN

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
06...	1045	40	428	7.6	27.5	26	3.8	48	--	3000	2000
DEC											
14...	0945	40	409	7.6	23.5	3.7	4.4	52	<10	2300	300
MAR , 1984											
06...	1740	27	441	8.1	26.0	3.5	7.4	91	20	550	440
APR											
19...	1035	13	465	7.6	26.5	<1.0	3.2	40	<10	250	430
JUN											
21...	1430	44	532	7.6	27.0	6.5	4.8	50	10	2000	270
AUG											
09...	1130	23	443	7.6	29.0	3.5	3.4	43	<10	570	240

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
06...	180	13	58	9.6	17	.6	2.5	172	14	23	.10
DEC											
14...	--	--	--	--	--	--	--	164	--	--	--
MAR , 1984											
06...	--	--	--	--	--	--	--	193	--	--	--
APR											
19...	210	7	67	10	20	.6	2.7	202	8.5	13	.10
JUN											
21...	--	--	--	--	--	--	--	212	--	--	--
AUG											
09...	210	16	68	9.6	16	.5	2.6	194	18	25	.20

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
06...	22	250	27	6	1.6	.05	1.7	.08	.42	.50	2.2
DEC											
14...	--	--	--	8	1.7	.07	1.8	.12	.28	.40	2.2
MAR , 1984											
06...	--	--	--	6	.87	.03	.90	.39	1.4	1.8	2.7
APR											
19...	15	260	9.3	5	.75	.05	.80	.26	.84	1.1	1.9
JUN											
21...	--	--	--	11	1.1	.07	1.2	.23	.07	.30	1.5
AUG											
09...	17	270	17	5	1.3	.02	1.3	<.01	--	<.10	--

K = non-ideal count

RIO CIBUCO BASIN

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
06...	9.7	.27	4	200	<1	10	5	<.1	<1	<1
DEC										
14...	9.7	.26	--	--	--	--	--	--	--	--
MAR , 1984										
06...	12	.40	--	--	--	--	--	--	--	--
APR										
19...	8.4	.33	2	<100	1	<1	<1	.2	<1	<1
JUN										
21...	6.6	.32	--	--	--	--	--	--	--	--
AUG										
09...	--	.34	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
NOV, 16	1035	72	400	24.5	MAY, 21	1215	33	436	27.0
JAN, 12	1015	35	416	25.0	JUL, 09	1416	30	450	29.0
FEB, 23	1105	28	449	24.5	SEP, 05	1040	24	400	28.0

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RIO CIBUCO BASIN

50039650 DRAINAGE DITCH BELOW WARNER LAMBERT LABORATORY NR SABANA, PR

WATER-QUALITY RECORDS

LOCATION.—Lat 18°27'17", long 66°21'09", 0.3 mile (0.5 km) northwest of Warner Lambert Laboratory, 0.6 mile (1.0 km) south of Sabana, and 1.1 miles (1.8 km) above confluence with Río Cibuco.

DRAINAGE AREA.—Indeterminate.

PERIOD OF RECORD.—Water years 1982 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT , 1983										
26...	1420	E .10	333	6.6	28.5	11	.0	0	75	300
DEC										
22...	1015	E .00	949	7.2	25.0	2.5	.0	0	29	50000
MAR , 1984										
05...	1100	E .00	356	6.8	23.0	6.6	.0	0	74	K1500
APR										
23...	1445	E .00	725	7.0	26.0	<1.0	.5	6	12	K140
JUN										
22...	1315	E .00	644	7.0	28.5	1.8	.0	0	20	K1500
AUG										
07...	1250	E .00	418	7.0	30.0	1.2	.0	0	23	300

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)
OCT , 1983										
26...	K1300	100	15	31	6.3	29	1	2.8	89	14
DEC										
22...	K1100	--	--	--	--	--	--	--	190	--
MAR , 1984										
05...	K100	--	--	--	--	--	--	--	85	--
APR										
23...	800	230	65	74	10	50	2	1.6	161	27
JUN										
22...	110	--	--	--	--	--	--	--	192	--
AUG										
07...	300	150	20	50	7.5	23	.8	1.8	136	26

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT , 1983										
26...	31	.20	10	200	5.5	8	.01	<.10	.15	.85
DEC										
22...	--	--	--	--	--	<1	<.01	<.10	.07	.93
MAR , 1984										
05...	--	--	--	--	--	8	<.01	<.10	.15	1.3
APR										
23...	120	.30	13	390	.00	2	<.01	<.10	.09	.51
JUN										
22...	--	--	--	--	--	12	<.01	<.10	.07	1.1
AUG										
07...	39	.20	15	240	.00	11	.01	<.10	.15	.65

E = estimate
K = non-ideal count

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50039650 DRAINAGE DITCH BELOW WARNER LAMBERT LABORATORY NR SABANA, PR—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
26...	1.0	.12	2	<100	1	3	3	<.1	<1	3
DEC										
22...	1.0	.10	--	--	--	--	--	--	--	--
MAR , 1984										
05...	1.4	.09	--	--	--	--	--	--	--	--
APR										
23...	.80	.05	1	100	1	<1	<1	<.1	<1	<1
JUN										
22...	1.2	.07	--	--	--	--	--	--	--	--
AUG										
07...	.60	.10	--	--	--	--	--	--	--	--

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RÍO CIBUCO BASIN

50039700 DRAINAGE DITCH AT RIO CIBUCO BELOW CENTRAL SAN VICENTE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°27'44", long 66°21'32", 60 ft (18 m), above confluence with Río Cibuco, 984 ft (300 m) east of Central San Vicente, and 0.7 mi (1.2 km) west of Sabana.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1982 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
26...	1010	10	421	7.0	26.0	12	.2	2	57	490	1400
DEC											
22...	1250	E 8.0	614	7.4	27.0	19	.3	4	27	480	430
MAR , 1984											
05...	1235	2.5	450	7.3	24.5	5.6	.5	6	42	230	370
APR											
23...	1225	5.2	595	7.4	27.0	4.1	3.0	38	<10	K160	780
JUN											
22...	1105	9.7	462	7.4	27.0	13	3.0	38	17	3600	2200
AUG											
07...	1455	7.4	407	7.4	29.5	1.5	3.6	47	<10	K100	K170

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
26...	150	12	47	8.2	26	1	2.4	139	9.7	48	.20
DEC											
22...	--	--	--	--	--	--	--	226	--	--	--
MAR , 1984											
05...	--	--	--	--	--	--	--	163	--	--	--
APR											
23...	210	24	67	9.9	34	1	2.2	184	24	67	.20
JUN											
22...	--	--	--	--	--	--	--	188	--	--	--
AUG											
07...	190	46	63	8.7	17	.6	2.5	147	19	26	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
26...	12	240	6.4	15	--	<.01	<.10	.07	.83	.90	--
DEC											
22...	--	--	--	8	--	<.01	<.10	.05	.55	.60	--
MAR , 1984											
05...	--	--	--	11	--	<.01	<.10	.13	1.1	1.2	--
APR											
23...	14	330	4.4	10	--	.01	<.10	.08	.32	.40	--
JUN											
22...	--	--	--	16	.09	.01	.10	<.01	--	<.10	--
AUG											
07...	17	240	4.8	7	.69	.01	.70	.01	.69	.70	1.4

E = estimate
K = non-ideal count

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50039700 DRAINAGE DITCH AT RIO CIBUCO BELOW CENTRAL SAN VICENTE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
26...	--	.12	2	<100	2	1	3	<.1	<1	<1
DEC										
22...	--	.09	--	--	--	--	--	--	--	--
MAR , 1984										
05...	--	.07	--	--	--	--	--	--	--	--
APR										
23...	--	.17	2	100	1	<1	<1	.1	<1	<1
JUN										
22...	--	.06	--	--	--	--	--	--	--	--
AUG										
07...	6.2	.30	--	--	--	--	--	--	--	--

RIO CIBUCO BASIN

50039750 RIO CIBUCO BELOW CENTRAL SAN VICENTE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°27'47", long 66°21'53", at bridge on Highway 688, 1,000 ft (305 m) northeast of Central San Vicente, 0.8 mi (1.3 km) west of Sabana, and 1.3 mi (2.1 km) northwest of Warner Lambert Laboratory.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1982 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
26...	1210	66	402	7.6	27.0	14	6.0	76	21	4300	K1400
DEC											
22...	1215	39	455	7.6	25.0	2.3	5.4	65	30	K990	620
MAR , 1984											
05...	1345	22	441	7.8	26.0	4.6	7.1	57	13	200	360
APR											
23...	1115	10	557	7.6	27.0	9.9	4.2	53	<10	K630	730
JUN											
22...	1040	94	383	7.6	25.0	55	7.7	93	17	43000	34000
AUG											
09...	1455	38	475	7.8	29.0	6.0	7.4	96	10	550	560

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
26...	180	17	55	9.2	17	.6	3.0	159	17	23	.20
DEC											
22...	--	--	--	--	--	--	--	175	--	--	--
MAR , 1984											
05...	--	--	--	--	--	--	--	137	--	--	--
APR											
23...	210	16	66	10	28	.9	2.5	190	19	51	.20
JUN											
22...	--	--	--	--	--	--	--	154	--	--	--
AUG											
08...	160	0	53	7.7	20	.7	2.2	180	23	33	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
26...	19	240	43	20	1.4	.04	1.4	.09	.71	.80	2.2
DEC											
22...	--	--	--	<1	1.6	.05	1.6	.08	.62	.70	2.3
MAR , 1984											
05...	--	--	--	4	--	<.01	.80	<.01	--	1.1	1.9
APR											
23...	13	300	9.0	10	--	<.01	.10	.06	.54	.60	.70
JUN											
22...	--	--	--	66	1.3	.08	1.4	.14	.36	.50	1.9
AUG											
08...	16	260	27	10	--	<.01	.20	.02	.48	.50	.70

K = non-ideal count

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50039750 RIO CIBUCO BELOW CENTRAL SAN VICENTE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
26...	9.7	.20	1	<100	1	3	2	<.1	<1	2
DEC										
22...	10	.27	--	--	--	--	--	--	--	--
MAR , 1984										
05...	5.4	.41	--	--	--	--	--	--	--	--
APR										
23...	3.1	.32	2	100	1	<1	<1	<.1	<1	<1
JUN										
22...	8.4	.27	--	--	--	--	--	--	--	--
AUG										
08...	3.1	.21	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JUN , 1984								
22...	1040	<.1	<.01	<.1	<.01	<.01	<.01	.02

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
JUN , 1984									
22...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)
JUN , 1984								
22...	.03	<.01	<.01	<.01	<.10	<.1	<1	<.01

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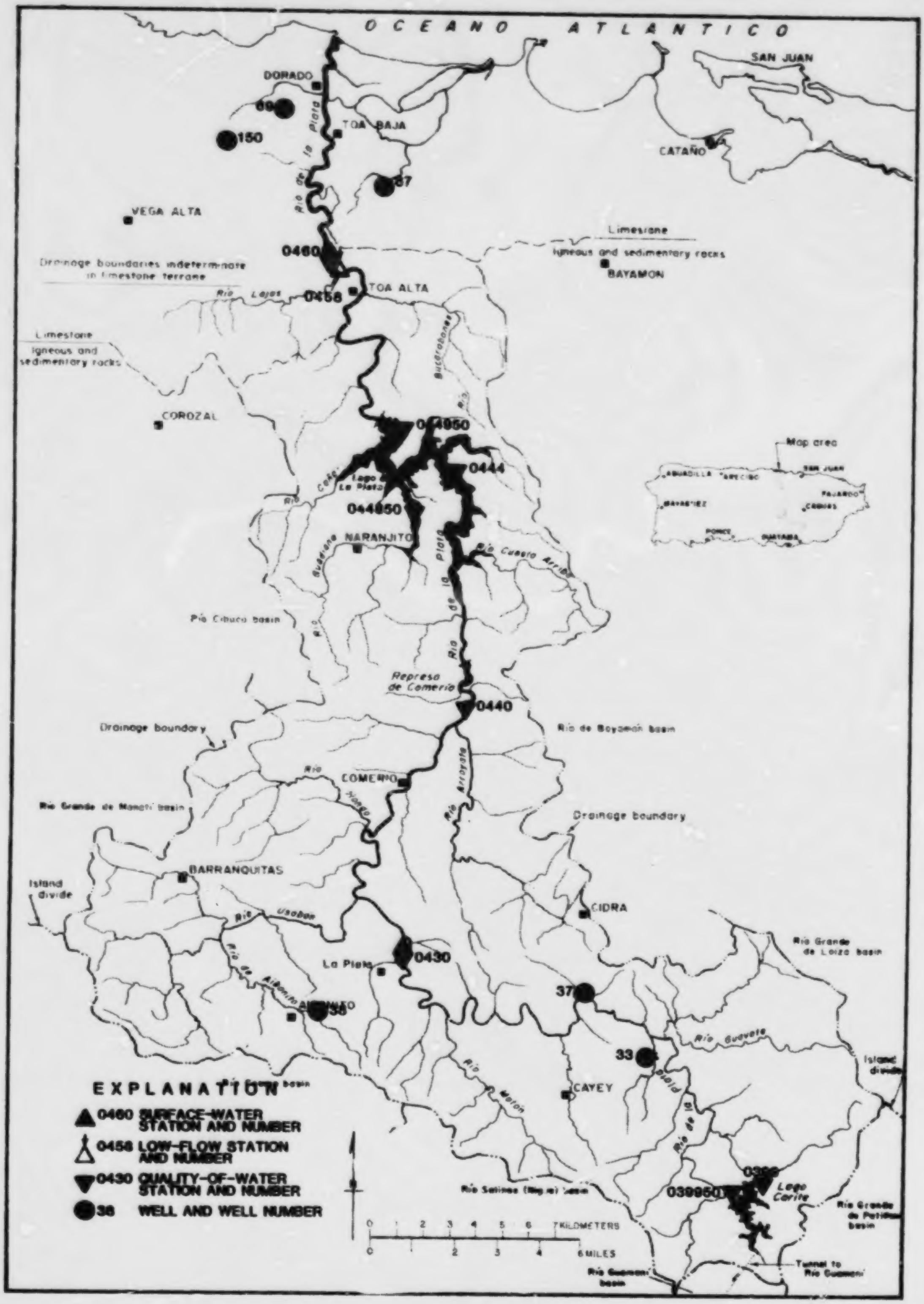
OCEANO ATLANTICO
SAN JUAN
DORADO
69
TOA BAJA
150
CATAÑO
37
Río de la Plata
VEGA ALTA
Limestone
Igneous and sedimentary rocks
0460
BAYAMON
Drainage boundaries indeterminate in limestone terrane
Río Lajas
0458
TOA ALTA
Limestone
Igneous and sedimentary rocks
Río Bucarabones
COROZAL
044950
Map area
0444
Río Cañas
Lago La Plata
044850
NARANJITO
Río Guadiana
Río Cuesta Arriba
Río de la Plata
Río Cibuco basin
Río
Represa de Comerio
0440
Drainage boundary
Río de Bayamón basin
Río Hondo
COMERIO
Río Arroyata
Río Grande de Manatí basin
Drainage boundary
BARRANQUITAS
Island divide
CIDRA
Río Usabón
Río de Aibonito
0430
La Plata
Río Grande de Loiza basin
37
AIBONITO
38
Río Guavate
33
Island divide
EXPLANATION
0460 SURFACE-WATER STATION AND NUMBER
0458 LOW-FLOW STATION AND NUMBER
0430 QUALITY-OF-WATER STATION AND NUMBER
38 WELL AND WELL NUMBER
Río Majón
CAYEY
Río de la Plata
Río Salinas (Niguas) basin
03995
039950
Lago Carite
Río Grande de Patillas basin
0 1 2 3 4 5 6 7 KILOMETERS
0 1 2 3 4 5 6 MILES
Río Guamaní basin
Tunnel to Río Guamaní

Figure 15.--Río de la Plata basin.

RIO DE LA PLATA BASIN

50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR

LOCATION.--Lat 18°09'37", long 66°13'44", Hydrologic Unit 21010005, at upstream side of bridge on Highway 173, 0.4 mi (0.6 km) northeast of Proyecto La Plata, and 2.5 mi (4.0 km) upstream from Río Usabón.

DRAINAGE AREA.--54.8 sq mi (142 sq km), excludes 8.2 sq mi (21.1 sq km) upstream from Carite Reservoir, the flow of which is diverted to Río Guamaní.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1958 (occasional measurements only), February 1959 to March 1960 (monthly measurements only), April 1960 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 850 ft (259 m), from topographic map. Prior to Mar. 29, 1961, wire-weight gage read twice daily at same site and datum.

REMARKS.--Records fair. The Puerto Rico Aqueduct and Sewer Authority operates a pumping plant about 5 mi (8 km) upstream which can divert as much as 23 cu ft/s (0.65 cu m/s) into Cidra Reservoir.

AVERAGE DISCHARGE.--24 years (1961-84), 111 cu ft/s (3.144 cu m/s), 27.51 in/yr (699 mm/yr), 80,420 acre-ft/yr (99.2 cu hm/yr); median of yearly mean discharges, 84 cu ft/s (2.38 cu m/s), 60,900 acre-ft/yr (75 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,600 cu ft/s (1,688 cu m/s) Aug. 27, 1961, gage height, 32.21 ft (9.818 m), from rating curve extended above 7,000 cu ft/s (198 cu m/s) on basis of slope-area measurement; minimum daily, 2.6 cu ft/s (0.074 cu m/s) July 25, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 cu ft/s (113 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Feb. 16	0100	4,220	120	10.47	3.191	July 5	0300	*5,370	152	10.92	3.328

Minimum discharge, 5.8 cu ft/s (0.164 cu m/s) July 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	19	26	23	12	15	16	12	20	10	10	7.3
2	38	17	91	13	12	14	15	11	12	30	15	7.4
3	26	20	58	13	11	13	12	10	11	20	20	26
4	58	886	28	13	12	13	12	8.2	9.1	15	12	20
5	28	502	26	15	15	13	12	7.4	8.4	600	27	46
6	23	310	27	19	15	14	13	7.5	76	100	14	160
7	21	189	31	16	12	13	16	8.2	115	50	12	20
8	21	101	24	13	11	13	16	7.8	49	30	9.8	12
9	22	76	21	13	11	15	14	8.0	25	25	7.1	9.6
10	25	60	17	13	59	16	13	7.7	324	20	7.1	10
11	22	50	20	14	33	13	16	7.2	128	18	11	56
12	24	100	19	13	21	12	16	7.5	37	17	11	31
13	29	50	20	15	499	12	14	8.9	37	16	11	25
14	24	30	18	183	241	13	14	18	44	100	9.9	31
15	20	27	18	42	90	13	16	20	29	50	9.4	20
16	31	25	21	24	1040	13	16	32	18	20	10	43
17	28	24	19	19	241	14	16	12	52	16	10	188
18	25	23	15	21	111	16	17	12	28	12	9.4	949
19	21	24	17	26	71	16	16	13	18	10	11	1010
20	22	24	17	34	51	15	14	12	12	8.2	11	956
21	27	23	17	44	39	9.9	14	11	10	6.8	9.3	661
22	36	21	16	24	33	9.9	13	11	10	10	9.4	178
23	51	19	18	21	30	10	13	12	9.0	14	8.4	68
24	38	18	17	17	27	11	12	15	9.0	11	7.4	39
25	24	16	14	17	25	13	12	15	9.0	7.6	7.5	28
26	22	17	9.7	18	23	14	11	13	8.0	6.2	11	21
27	20	19	11	15	21	15	11	24	8.0	7.8	74	27
28	22	19	12	14	21	14	20	22	8.0	8.0	16	15
29	20	23	12	15	19	13	15	19	8.0	7.0	8.0	13
30	23	25	15	13	---	15	13	55	8.0	15	7.6	13
31	22	---	22	12	---	16	---	76	---	17	6.8	---
TOTAL	861	2757	696.7	757	2806	416.8	428	503.4	1139.5	1077.6	403.1	4690.3
MEAN	27.8	91.9	22.5	24.4	96.8	13.4	14.3	16.2	38.0	34.8	13.0	156
MAX	58	886	91	183	1040	16	20	76	324	400	74	1010
MIN	20	16	9.7	12	11	9.9	11	7.2	8.0	6.2	6.8	7.3
CFSM	.51	1.68	.41	.45	1.77	.25	.26	.30	.69	.64	.24	2.85
IN.	.58	1.87	.47	.51	1.90	.28	.29	.34	.77	.73	.27	3.18
AC-FT	1710	5470	1380	1500	5570	827	849	998	2260	2140	800	9300

CAL YR 1983 TOTAL 28544.0 MEAN 78.2 MAX 2920 MIN 9.0 CFSM 1.43 IN 19.38 AC-FT 56620
WTR YR 1984 TOTAL 16536.4 MEAN 45.2 MAX 1040 MIN 6.2 CFSM .83 IN 11.23 AC-FT 32800

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50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
07...	1405	21	382	8.4	30.5	17	10.0	138	27	300	230
DEC											
15...	1125	18	444	8.2	24.5	3.1	10.2	126	<10	58	K30
MAR , 1984											
14...	1335	13	440	8.8	25.0	4.5	11.3	149	12	250	170
MAY											
03...	1255	10	427	8.2	28.0	3.4	13.3	171	16	K160	350
JUN											
20...	1330	10	353	8.2	28.0	4.2	10.4	136	--	K250	230
AUG											
15...	1425	8.4	475	8.4	31.0	.40	11.6	157	12	K160	50

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
07...	130	0	32	12	29	1	2.3	131	17	30	.20
DEC											
15...	--	--	--	--	--	--	--	166	--	--	--
MAR , 1984											
14...	--	--	--	--	--	--	--	169	--	--	--
MAY											
03...	160	0	39	15	34	1	2.7	166	24	32	.20
JUN											
20...	--	--	--	--	--	--	--	136	--	--	--
AUG											
15...	140	0	32	14	41	2	3.2	147	20	45	.30

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
07...	25	230	13	6	2.0	.02	2.0	.04	.66	.70	2.7
DEC											
15...	--	--	--	8	2.3	.02	2.3	.03	.77	.80	3.1
MAR , 1984											
14...	--	--	--	6	1.7	.02	1.7	.04	.56	.60	2.3
MAY											
03...	24	270	7.3	8	.77	.03	.80	.07	.63	.70	1.5
JUN											
20...	--	--	--	5	1.2	.02	1.2	.06	1.2	1.3	2.5
AUG											
15...	25	270	6.1	2	--	<.01	<.10	.41	.29	.70	--

K = non-ideal count

RIO DE LA PLATA BASIN

50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
07...	12	.52	3	200	1	12	4	<.1	<1	<1
DEC										
15...	14	.66	--	--	--	--	--	--	--	--
MAR , 1984										
14...	10	.35	--	--	--	--	--	--	--	--
MAY										
03...	6.6	.67	2	<100	1	2	1	<.1	<1	<1
JUN										
20...	11	.34	--	--	--	--	--	--	--	--
AUG										
15...	--	1.1	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV, 18	1228	24	413	27.5	MAR, 13	1300	13	440	26.0
JAN, 24	1345	18	317	25.5					

RIO DE LA PLATA BASIN

50044000 RIO DE LA PLATA NEAR COMERIO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°14'33", long 66°12'28", at bridge on Highway 156, 0.56 mi (0.9 km) upstream from dam, about 2.0 mi (3.2 km) northeast of Comerio plaza.

DRAINAGE AREA.--139 sq mi (360 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
18...	0945	103	301	7.8	25.0	320	7.4	92	58	K90000	K140000
DEC											
20...	1105	33	407	8.2	24.5	11	11.0	134	<10	400	250
MAR , 1984											
14...	1050	28	430	8.5	25.0	1.5	9.1	112	12	K950	950
MAY											
04...	1150	24	409	8.1	29.0	5.0	11.5	150	16	K960	550
JUN											
29...	1015	21	393	8.0	27.0	9.9	9.2	117	22	340	400
AUG											
28...	0915	63	443	8.0	27.5	6.0	8.4	108	13	K1400	600

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
18...	100	1	24	10	20	.9	3.6	100	16	22	.20
DEC											
20...	--	--	--	--	--	--	--	156	--	--	--
MAR , 1984											
14...	--	--	--	--	--	--	--	165	--	--	--
MAY											
04...	160	5	36	15	28	1	3.1	151	26	30	.20
JUN											
29...	--	--	--	--	--	--	--	151	--	--	--
AUG											
28...	150	0	34	15	38	1	4.0	150	28	44	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
18...	20	180	49	15	--	<.01	<.10	.04	2.7	2.7	--
DEC											
20...	--	--	--	6	1.2	.04	1.2	.04	.56	.60	1.8
MAR , 1984											
14...	--	--	--	5	.94	.06	1.0	.29	.21	.50	1.5
MAY											
04...	28	260	17	11	.78	.12	.90	.25	1.2	1.4	2.3
JUN											
29...	--	--	--	16	.65	.05	.70	.11	.19	.30	1.0
AUG											
28...	25	280	47	6	1.4	.06	1.5	.02	.58	.60	2.1

K = non-ideal count

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RIO DE LA PLATA BASIN

50044000 RIO DE LA PLATA NEAR COMERIO, PR—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
18...	--	.34	1	100	1	37	16	<.1	1	1
DEC										
20...	8.0	.48	--	--	--	--	--	--	--	--
MAR , 1984										
14...	6.5	.52	--	--	--	--	--	--	--	--
MAY										
04...	19	.55	2	100	1	3	3	<.1	<1	<1
JUN										
29...	4.4	.51	--	--	--	--	--	--	--	--
AUG										
28...	9.3	.90	--	--	--	--	--	--	--	--

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RIO DE LA PLATA BASIN

50044850 RIO GUADIANA NEAR NARANJITO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°18'39", long 66°13'28", at steel-cross-bridge 0.8 mi (1.3 km) northwest of Highway 164, 1.2 mi (1.9 km) upstream from mouth and about 2.0 mi (3.2 km) northeast of Naranjito plaza.

DRAINAGE AREA.--4.0 sq mi (10.3 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
18...	1240	5.8	317	8.0	27.5	1.7	8.0	102	<10	K13000	K1100
DEC											
20...	1315	4.6	342	8.0	25.0	2.1	8.8	107	13	K7000	K1100
MAR , 1984											
20...	0855	2.8	307	7.8	21.0	23	9.2	104	10	K7000	K11000
MAY											
09...	1255	1.4	353	8.2	29.0	1.0	13.0	170	<10	470	2800
JUN											
29...	1225	2.5	363	8.0	27.5	3.0	8.6	109	17	K1000	K1400
AUG											
28...	1230	3.3	351	8.0	30.0	1.5	8.2	108	13	K1100	520

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
18...	130	15	29	13	15	.6	2.2	111	15	21	.20
DEC											
20...	--	--	--	--	--	--	--	121	--	--	--
MAR , 1984											
20...	--	--	--	--	--	--	--	101	--	--	--
MAY											
09...	140	19	32	14	21	.8	2.6	119	18	31	.20
JUN											
29...	--	--	--	--	--	--	--	125	--	--	--
AUG											
28...	130	15	32	13	19	.7	3.1	119	22	29	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
18...	27	190	3.0	<1	--	<.01	<.10	.01	2.8	2.8	--
DEC											
20...	--	--	--	8	1.7	.01	1.7	.07	.53	.60	2.3
MAR , 1984											
20...	--	--	--	4	2.1	.02	2.1	.21	.19	.40	2.5
MAY											
09...	26	220	.82	2	2.1	.02	2.1	.34	.26	.60	2.7
JUN											
29...	--	--	--	16	2.4	.02	2.4	.12	.28	.40	2.8
AUG											
28...	23	210	1.9	7	--	<.01	1.4	<.01	--	.40	1.8

K = non-ideal count

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RIO DE LA PLATA BASIN

50044850 RIO GUADIANA NEAR NARANJITO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
18...	--	.28	1	100	<1	32	1	<.1	<1	<1
DEC										
20...	10	.41	--	--	--	--	--	--	--	--
MAR , 1984										
20...	11	.52	--	--	--	--	--	--	--	--
MAY										
09...	12	.87	2	100	2	<1	1	<.1	1	<1
JUN										
29...	12	.78	--	--	--	--	--	--	--	--
AUG										
28...	5.0	.50	--	--	--	--	--	--	--	--

50046000 RIO DE LA PLATA AT TOA ALTA, PR

LOCATION.--Lat 18°23'50", long 66°15'17", Hydrologic Unit 21010005, on left bank, at upstream side of bridge on Higiway 165, 800 ft (244 m) downstream from Río Lajas, and 0.6 mi (1.0 km) northwest of Toa Alta, 10 mi (16 km) downstream from Puerto Rico Aqueduct and Sewer Authority reservoir.

DRAINAGE AREA.--200 sq mi (518 sq km), excludes 8.2 sq km (21.2 sq km) upstream from Lago Carite, flow from which is diverted to Río Cuamaní.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1959 (measurement only), January 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 8.55 ft (2.606 m) above mean sea level (levels by Puerto Rico Department of Public Works). Prior to Feb. 25, 1960, wire-weight gage at same site and datum.

REMARKS.--Records fair. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage.

AVERAGE DISCHARGE.--24 years (1961-84), 267 cu ft/s (7.561 cu m/s), 18.13 in/yr (461 mm/yr), 193,400 acre-ft/yr (238 cu hm/yr); median of yearly mean discharges, 218 cu ft/s (6.17 cu m/s), 158,000 acre-ft/yr (195 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,500 cu ft/s (2,704 cu m/s) Sept. 6, 1960, gage height, 36.35 ft (11.079 m), from floodmark, from rating curve extended above 12,000 cu ft/s (340 cu m/s) on basis of contracted-opening measurement of peak flow; minimum, 2.2 cu ft/s (0.062 cu m/s) Apr. 25, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate discharges and elevations to gage datum of major floods, as pointed out by local residents are as follows: Sept. 13, 1928, 120,000 cu ft/s (3,400 cu m/s), gage height, 37.4 ft (11.4 m); June 16, 1943, 82,000 cu ft/s (2,320 cu m/s), gage height, 34.4 ft (10.48 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 cu ft/s (170 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 18	1430	*14,800	419	21.71	6.617

Minimum discharge, 2.2 cu ft/s (0.062 cu m/s) Apr. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	100	33	23	14	25	11	5.2	12	12	30	20
2	59	90	48	19	11	19	11	5.6	13	13	54	17
3	53	80	37	19	11	16	9.9	5.2	12	15	37	17
4	52	300	31	18	11	15	9.9	4.2	11	17	101	17
5	51	500	27	18	10	14	8.8	4.0	14	249	89	39
6	48	200	31	18	9.9	15	7.5	4.2	39	48	43	63
7	39	100	24	26	11	15	6.7	4.7	23	26	35	27
8	36	80	24	26	11	14	6.3	5.0	16	20	31	21
9	47	70	25	25	9.4	14	5.7	4.3	12	17	28	19
10	39	100	22	20	15	14	5.1	3.9	11	28	27	19
11	36	200	24	17	51	13	4.7	4.0	12	29	26	88
12	52	100	23	18	16	13	4.1	3.3	14	22	26	125
13	101	80	22	16	48	13	3.6	3.6	288	18	31	99
14	63	65	22	15	32	17	3.3	3.6	148	37	25	93
15	51	64	22	15	15	14	3.1	3.8	31	42	24	55
16	51	60	23	15	107	13	3.1	4.1	64	20	70	57
17	320	58	26	14	138	12	2.7	4.3	53	18	50	706
18	192	56	27	16	78	12	2.7	4.6	27	18	30	2780
19	70	65	25	15	61	12	2.8	4.9	22	122	25	1420
20	59	65	23	15	56	11	2.9	5.4	19	106	23	2870
21	55	60	21	14	48	12	3.1	5.6	18	49	22	1810
22	67	46	24	13	42	12	3.4	6.7	17	68	25	649
23	83	41	25	13	38	13	3.7	8.3	15	88	50	305
24	206	39	21	16	60	13	3.1	11	15	51	22	184
25	160	39	20	17	238	12	2.7	15	14	37	20	107
26	130	37	20	15	77	12	3.1	15	13	32	30	101
27	110	37	20	14	73	12	4.1	20	13	28	80	93
28	100	35	20	14	79	11	4.7	11	11	38	40	90
29	95	33	20	13	38	11	4.7	15	13	44	20	81
30	90	35	20	14	---	12	4.6	25	12	30	18	73
31	120	---	42	14	---	11	---	16	---	28	17	---
TOTAL	2700	2835	792	525	1408.3	422	152.1	236.5	982	1370	1149	12045
MEAN	87.1	94.5	25.5	16.9	48.6	13.6	5.07	7.63	32.7	44.2	37.1	402
MAX	320	500	48	26	238	25	11	25	288	249	101	2870
MIN	36	33	20	13	9.4	11	2.7	3.3	11	12	17	17
CFSM	.44	.47	.13	.09	.24	.07	.03	.04	.16	.22	.19	2.01
IN.	.50	.53	.15	.10	.26	.08	.03	.04	.18	.25	.21	2.24
AC-FT	5360	5620	1570	1040	2790	837	302	469	1950	2720	2280	23890

CAL YR 1983 TOTAL 61338.0 MEAN 168 MAX 4720 MIN 6.9 CFSM .84 IN 11.41 AC-FT 121700
WTR YR 1984 TOTAL 24616.9 MEAN 67.3 MAX 2870 MIN 2.7 CFSM .34 IN 4.58 AC-FT 48830

RIO DE LA PLATA BASIN

50046000 RIO DE LA PLATA AT TOA ALTA, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Samples collected at bridge on Highway 2, 1.2 mi (1.9 km) downstream from discharge station.

PERIOD OF RECORD.--Water years 1958 to current year

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT , 1983											
03...	1305	53	419	7.7	29.0	3.0	5.8	75	2200	2100	170
DEC											
07...	1410	23	542	7.8	26.5	1.8	7.4	92	3200	2800	210
FEB , 1984											
03...	1520	11	560	7.5	23.0	1.2	2.4	28	K17	230	230
APR											
17...	1350	2.7	632	7.4	23.5	1.0	9.6	124	56	700	240
JUN											
11...	1235	12	472	7.1	26.0	1.3	1.4	17	2100	510	200
AUG											
02...	1700	60	504	7.4	26.5	2.5	2.1	26	K9200	5000	210

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT , 1983											
03...	6	51	11	21	.7	2.7	167	14	30	.20	22
DEC											
07...	19	65	11	25	.8	2.9	189	20	41	.30	19
FEB , 1984											
03...	18	70	13	29	.9	.90	211	18	49	<.10	17
APR											
17...	14	73	14	32	.9	.50	226	15	60	.10	20
JUN											
11...	30	62	11	23	.7	3.1	171	31	41	.20	16
AUG											
02...	16	67	9.7	20	.6	3.1	192	23	34	.10	17

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
OCT , 1983										
03...	262	250	37	.56	.14	.18	.40	.14	.15	.15
DEC										
07...	328	300	20	1.1	.11	.14	.40	.24	.22	.21
FEB , 1984										
03...	344	320	10	.16	.02	.03	.70	.35	.33	.33
APR										
17...	384	350	2.6	<.10	.10	.13	.60	.19	.18	.10
JUN										
11...	334	290	11	<.10	.28	.36	.50	.52	.39	.37
AUG										
02...	315	290	51	.10	.36	.46	1.1	.27	.20	.20

K = non-ideal count

50046000 RIO DE LA PLATA AT TOA ALTA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT , 1983										
03...	.46	<10	2	61	<.5	<1	<1	<3	1	19
DEC										
07...	.64	--	--	--	--	--	--	--	--	--
FEB , 1984										
03...	1.0	<10	2	64	<.5	<1	<1	<3	2	6
APR										
17...	.31	--	--	--	--	--	--	--	--	--
JUN										
11...	1.1	20	2	81	<.0	<1	1	<3	1	19
AUG										
02...	.61	<10	2	65	<.0	<1	1	<3	1	18

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)
OCT , 1983										
03...	1	<4	160	<.1	<10	2	<1	<1	220	<6
DEC										
07...	--	--	--	--	--	--	--	--	--	--
FEB , 1984										
03...	1	<4	53	<.1	<10	4	<1	<1	340	<6
APR										
17...	--	--	--	--	--	--	--	--	--	--
JUN										
11...	<1	<4	710	.6	<10	3	<1	<1	350	<6
AUG										
02...	<1	<4	140	.2	<10	1	<1	<1	310	<6

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
NOV, 14	1530	65	410	26.0	MAY, 23	1037	8.6	680	26.0
JAN, 13	0925	16	568	24.5	JUL, 17	1236	18	421	30.0
MAR, 16	1240	12	510	26.0	SEP, 11	1321	30	520	26.5

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JUN , 1984								
11...	1235	<.1	<.01	<.1	<.01	<.01	<.01	.03

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JUN , 1984									
11...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)
JUN , 1984								
11...	<.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

RIO DE LA PLATA BASIN

50046000 RIO DE LA PLATA AT TOA ALTA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT , 1983				
03...	1305	526	15	93
DEC				
07...	1410	23	--	--
FEB , 1984				
03...	1520	11	13	100
APR				
17...	1350	2.7	42	60
JUN				
11...	1235	100	15	100
AUG				
02...	1700	60	212	100
SEP				
19...	1820	--	267	75
19...	1835	--	169	78
19...	1845	--	171	90
19...	1850	--	158	85
19...	1855	--	139	88
19...	1900	--	144	86
19...	1905	--	159	92
19...	1910	--	153	84
19...	1915	--	156	74
19...	1925	--	155	77

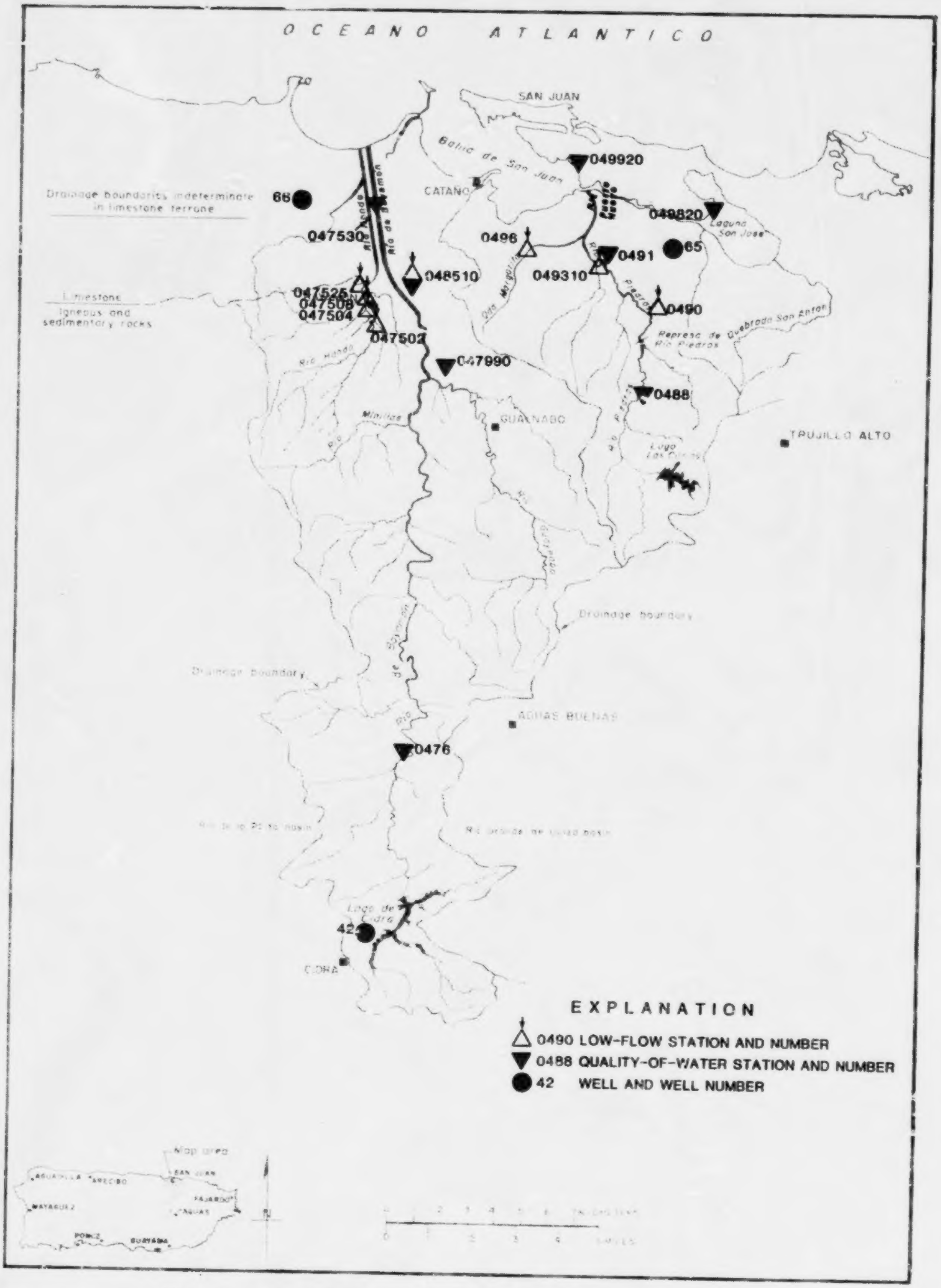
OCEANO ATLANTICO
SAN JUAN
Bahia de San Juan
CATAÑO
049920
049820
Laguna San José
0496
0491
65
049310
0490
Represa de Quebrada San Anton
Rio Piedras
66
Drainage boundaries indeterminate in limestone terrane
047530
Río Hondo
Río de Bayamón
048510
047525
047508
047504
047502
Limestone
Igneous and sedimentary rocks
Río Hondo
047990
0488
GUAYNABO
TRUJILLO ALTO
Lago Las Curias
Drainage boundary
Drainage boundary
Río de Bayamón
AGUAS BUENAS
0476
Río Grande de Loíza basin
Lago de Cidra
42
CIDRA
EXPLANATION
0490 LOW-FLOW STATION AND NUMBER
0488 QUALITY-OF-WATER STATION AND NUMBER
42 WELL AND WELL NUMBER
Map area
AGUADILLA
ARECIBO
SAN JUAN
MAYAGUEZ
FAJARDO
CAGUAS
PONCE
GUAYAMA
N
0 1 2 3 4 5 6 7 KILOMETERS
0 1 2 3 4 MILES

Figure 16.--Río Hondo to Río Puerto Nuevo basins.

RIO HONDO BASIN

50047530 RIO HONDO AT FLOOD CHANNEL NEAR CATAÑO,PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°26'13", long 66°09'36", at Río Hondo Channel, 800 ft (245 m) below junction with Río Hondo, 0.9 mi (1.5 km) downstream from bridge on de Diego Expressway and 1.1 mi (1.8 km) above mouth.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
25...	1210	1.00	33100	9.4	31.0	6.4	15.0	226	1100	K11000	1200
DEC											
06...	1250	1.00	7730	7.5	30.0	3.5	.0	0	290	K1100000	260000
MAR , 1984											
22...	1305	1.00	36400	8.3	29.0	3.0	11.4	168	40	--	<100
APR											
12...	0955	1.00	40000	7.4	30.0	5.0	6.6	100	--	32000	K110
JUL											
12...	1125	1.00	565	7.6	30.0	50	4.0	53	16	K58000	2800
AUG											
31...	1530	1.00	11000	7.7	32.5	3.2	.0	0	180	>600000	6400

DATE	HARDNESS, (MG/L CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
25...	3900	3700	220	810	6800	48	240	139	1700	12000	.70
DEC											
06...	--	--	--	--	--	--	--	158	--	2200	--
MAR , 1984											
22...	--	--	--	--	--	--	--	173	--	19000	--
APR											
12...	1400	1200	280	170	7300	87	220	189	1600	11000	.60
JUL											
12...	--	--	--	--	--	--	--	63	--	--	--
AUG											
31...	1000	840	99	190	1600	22	65	185	390	3100	.40

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983										
25...	6.8	22000	76	.06	.04	.10	.98	3.6	4.6	4.7
DEC										
06...	--	--	19	--	.01	<.10	6.5	4.5	11	--
MAR , 1984										
22...	--	--	81	--	.01	<.10	2.8	1.9	4.7	--
APR										
12...	5.8	21000	43	--	.02	<.10	6.3	.20	6.5	--
JUL										
12...	--	--	49	.17	.03	.20	.24	.76	1.0	1.2
AUG										
31...	17	5600	5	.08	.02	.10	9.4	4.6	14	14

K = non-ideal count

RIO HONDO BASIN

50047530 RIO HONDO AT FLOOD CHANNEL NR CATAÑO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
25...	21	.64	2	100	1	2	4	<.1	<1	<1
DEC										
06...	--	.24	--	--	--	--	--	--	--	--
MAR , 1984										
22...	--	2.6	--	--	--	--	--	--	--	--
APR										
12...	--	2.3	3	<100	<1	<1	2	.6	<1	1
JUL										
12...	5.3	.25	--	--	--	--	--	--	--	--
AUG										
31...	62	3.6	--	--	--	--	--	--	--	--

RIO DE BAYAMON BASIN

50047600 RIO DE BAYAMON NEAR AGUAS BUENAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°14'39", long 66°08'39", at bridge on Highway 156, and 2.9 mi (4.7 km) west of Aguas Buenas plaza.

DRAINAGE AREA.--18.5 sq mi (47.9 sq km).

PERIOD OF RECORD.--Water years 1958-65, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
07...	1010	28	242	8.0	24.5	15	8.5	105	--	160	390
DEC											
15...	1400	21	250	8.4	23.5	2.0	9.9	119	<10	K160	220
MAR , 1984											
14...	1620	26	235	8.7	24.5	3.5	8.9	109	12	K110	460
MAY											
04...	0930	18	243	8.0	24.0	1.1	10.5	128	<10	200	700
JUL											
10...	1040	12	279	7.6	25.0	4.4	8.6	107	--	320	630
AUG											
15...	1030	26	219	7.8	25.5	3.5	9.3	110	<10	K780	300

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
07...	92	0	21	9.5	17	.8	2.1	92	10	16	.10
DEC											
15...	--	--	--	--	--	--	--	93	--	--	--
MAR , 1984											
14...	--	--	--	--	--	--	--	90	--	--	--
MAY											
04...	87	0	19	9.6	17	.8	1.9	93	9.4	17	.10
JUL											
10...	--	--	--	--	--	--	--	107	--	--	--
AUG											
15...	77	0	18	7.8	13	.7	3.0	80	11	16	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
07...	25	160	12	8	--	<.01	.40	<.01	--	.50	.90
DEC											
15...	--	--	--	4	--	<.01	.60	.04	.36	.40	1.0
MAR , 1984											
14...	--	--	--	4	--	<.01	.20	.08	.32	.40	.60
MAY											
04...	23	150	7.4	2	--	<.01	.20	<.01	--	.90	1.1
JUL											
10...	--	--	--	5	.68	.02	.70	.01	.69	.70	1.4
AUG											
15...	20	140	9.2	5	.19	.01	.20	.04	.36	.40	.60

K = non-ideal count

RIO DE BAYAMON BASIN

50047600 RIO DE BAYAMON NEAR AGUAS BUENAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
07...	4.0	.06	2	200	1	9	4	.1	<1	<1
DEC										
15...	4.4	.05	--	--	--	--	--	--	--	--
MAR , 1984										
14...	2.7	.04	--	--	--	--	--	--	--	--
MAY										
04...	4.9	.03	1	100	1	7	1	.1	<1	<1
JUL										
10...	6.2	.04	--	--	--	--	--	--	--	--
AUG										
15...	2.7	.08	--	--	--	--	--	--	--	--

RIO DE BAYAMON BASIN

50047990 RIO GUAYNABO NEAR BAYAMON, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°22'32", long 66°07'59", at bridge on Highway 833, 0.2 mi (0.3 km) upstream from Río de Bayamón, and 2.3 mi (3.7 km) southeast of Bayamón Plaza.

DRAINAGE AREA.--73.2 sq mi (189.6 sq km).

PERIOD OF RECORD.--Water years 1958, 1964, 1971-73, 1976, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
17...	1335	29	374	7.4	27.5	9.6	4.5	58	56	K8000	4700
DEC											
19...	1220	19	435	7.3	25.5	25	1.4	17	27	4500	700
MAR , 1984											
20...	1135	13	450	7.9	25.0	5.8	3.6	44	20	K7700	740
MAY											
11...	1055	7.7	568	7.2	26.0	1.5	.0	0	56	>60000	3300
JUL											
09...	1250	21	506	7.3	29.0	4.0	3.0	39	21	K1200	440
AUG											
27...	1215	56	330	7.4	27.0	1.8	5.1	64	10	K550000	K93000

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
17...	140	6	38	11	25	1	3.6	134	21	30	.20
DEC											
19...	--	--	--	--	--	--	--	161	--	--	--
MAR , 1984											
20...	--	--	--	--	--	--	--	154	--	--	--
MAY											
11...	150	0	41	12	42	2	5.9	187	23	51	.20
JUL											
09...	--	--	--	--	--	--	--	156	--	--	--
AUG											
27...	110	0	31	3.9	20	.8	3.7	113	26	25	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
17...	27	240	18	35	.42	.08	.50	2.0	.40	2.4	2.9
DEC											
19...	--	--	--	6	.07	.03	.10	3.2	.20	3.4	3.5
MAR , 1984											
20...	--	--	--	4	--	.01	<.10	3.0	.70	3.7	--
MAY											
11...	29	320	6.5	5	--	.02	<.10	8.1	.00	6.6	--
JUL											
09...	--	--	--	8	.08	.02	.10	3.2	.60	3.8	3.9
AUG											
27...	20	200	31	75	1.1	.09	1.2	1.4	1.2	2.6	3.8

K = non-ideal count

RIO DE BAYAMON BASIN

50047990 RIO CUAYNABO NEAR BAYAMON, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
17...	13	.58	1	100	<1	<1	1	<.1	<1	<1
DEC										
19...	15	1.0	--	--	--	--	--	--	--	--
MAR , 1984										
20...	--	.45	--	--	--	--	--	--	--	--
MAY										
11...	--	2.2	2	100	2	<1	1	.3	<1	<1
JUL										
09...	17	.92	--	--	--	--	--	--	--	--
AUG										
27...	17	.35	--	--	--	--	--	--	--	--

50048510 RIO DE BAYAMON AT FLOOD CHANNEL AT BAYAMON, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'29", long 66°09'04", at bridge on Highway 890, 1.0 (1.6 km) downstream from bridge on Highway 2, and 3.2 mi (5.1 km) above mouth.

DRAINAGE AREA.--71.9 sq mi (186.2 sq km).

PERIOD OF RECORD.--Water years 1974 to current year.

REMARKS.--Prior to 1979 sampling site was 0.8 mile (1.3 km) downstream but was changed because of flood channel construction.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
17...	1045	74	316	7.4	26.5	65	5.0	62	40	K110000	K44000
DEC											
19...	0950	35	412	7.2	25.0	3.2	4.2	51	17	550	K600
MAR , 1984											
22...	1035	20	476	7.8	26.5	5.6	7.8	97	13	--	K600
MAY											
09...	1535	19	358	7.6	31.0	2.9	8.0	108	23	410000	36000
JUL											
09...	1040	26	420	7.2	29.0	7.4	4.8	62	12	4600	990
AUG											
28...	1525	50	356	7.4	30.5	7.5	5.0	66	19	30000	500

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
17...	120	3	31	9.9	19	.8	2.9	115	17	22	.20
DEC											
19...	--	--	--	--	--	--	--	153	--	--	--
MAR , 1984											
22...	--	--	--	--	--	--	--	179	--	--	--
MAY											
09...	160	0	41	13	38	1	3.0	187	24	48	.20
JUL											
09...	--	--	--	--	--	--	--	152	--	--	--
AUG											
28...	130	0	35	11	22	.9	3.3	133	27	27	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
17...	23	190	39	110	.55	.15	.70	1.2	1.0	2.2	2.9
DEC											
19...	--	--	--	6	.30	.10	.40	2.5	.60	3.1	3.5
MAR , 1984											
22...	--	--	--	--	.15	.15	.30	3.5	.80	4.3	4.6
MAY											
09...	29	310	16	20	.11	.09	.20	9.4	.00	9.0	9.2
JUL											
09...	--	--	--	24	.46	.14	.60	1.6	.00	1.6	2.2
AUG											
28...	24	230	30	38	.40	.20	.60	.89	.61	1.5	2.1

K = non-ideal count

50048510 RIO DE BAYAMON AT FLOOD CHANNEL AT BAYAMON, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
17...	13	.42	1	<100	1	8	5	<.1	<1	<1
DEC										
19...	15	.37	--	--	--	--	--	--	--	--
MAR , 1984										
22...	20	.44	--	--	--	--	--	--	--	--
MAY										
09...	41	1.7	2	100	2	3	3	.2	<1	<1
JUL										
09...	9.7	.42	--	-	--	--	--	--	--	--
AUG										
28...	9.3	.39	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JUL , 1984								
09...	1040	<.1	<.01	<.1	<.01	<.01	<.01	.16

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
JUL , 1984									
09...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	.01	<.01

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)
JUL , 1984								
09...	<.01	<.01	<.01	<.01	.10	<.1	<1	<.01

RIO PUERTO NUEVO BASIN

50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°22'15", long 66°03'40", at bridge on Winston Churchill Avenue in the El Señorial Housing area, 0.5 mi (0.8 km) west of Highway 176, and 2.5 mi (4.0 km) southwest of Río Piedras plaza.

DRAINAGE AREA.--8.17 sq mi (20.9 sq km).

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
12...	1235	5.8	328	7.7	27.0	9.2	8.2	103	71	37000	K12000
DEC											
12...	1125	5.0	376	7.4	23.5	2.4	6.0	71	15	50000	7200
MAR , 1984											
20...	1445	4.5	382	7.9	25.0	16	8.6	105	23	K82000	40000
MAY											
10...	0940	1.9	390	7.4	25.5	1.0	8.0	98	12	K1400	900
JUL											
09...	1240	4.0	429	7.9	27.5	5.4	7.8	99	<10	4300	5900
AUG											
24...	1210	3.6	352	7.8	27.0	.70	8.3	103	<10	3500	4500

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
12...	120	3	31	9.9	20	.8	2.5	115	19	25	.10
DEC											
12...	--	--	--	--	--	--	--	140	--	--	--
MAR , 1984											
20...	--	--	--	--	--	--	--	143	--	--	--
MAY											
10...	150	0	39	12	26	1	1.8	157	15	29	.20
JUL											
09...	--	--	--	--	--	--	--	142	--	--	--
AUG											
24...	130	0	35	11	22	.9	2.1	135	16	27	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
12...	30	208	3.3	10	.79	.01	.80	.18	.42	.60	1.4
DEC											
12...	--	--	--	26	1.1	.17	1.3	.75	.00	.70	2.0
MAR , 1984											
20...	--	--	--	4	.77	.13	.90	.64	.26	.90	1.8
MAY											
10...	35	250	1.3	4	.18	.02	.20	.61	4.4	5.0	5.2
JUL											
09...	--	--	--	9	.47	.03	.50	.57	.00	.50	1.0
AUG											
24...	35	230	2.2	14	--	<.01	.40	.12	.48	.60	1.0

K = non-ideal count

50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
12...	6.2	.21	3	300	1	4	3	<.1	<1	<1
DEC										
12...	9.9	.34	--	--	--	--	--	--	--	--
MAR , 1984										
20...	5.0	.37	--	--	--	--	--	--	--	--
MAY										
10...	23	.23	2	100	2	<1	<1	.1	<1	<1
JUL										
09...	4.4	.15	--	--	--	--	--	--	--	--
AUG										
24...	4.4	.24	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JUL , 1984								
09...	1240	<.1	<.01	<.1	<.01	<.01	<.01	.01

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
JUL , 1984									
09...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	.02	<.01

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)
JUL , 1984								
09...	.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

RIO PUERTO NUEVO BASIN

50049100 RIO PIEDRAS AT HATO REY, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'34", long 66°04'10", at bridge on Avenida Piñero at Expreso Las Américas, and 0.8 mi (1.3 km) southwest of Hato Rey.

DRAINAGE AREA.--15.4 sq mi (39.9 sq km).

PERIOD OF RECORD.--Water years 1971 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
12...	1455	14	372	7.6	30.5	23	5.6	75	67	330000	K15000
DEC											
12...	1320	13	418	7.5	27.5	1.3	6.6	84	17	K120000	5000
MAR , 1984											
19...	1355	11	411	8.2	30.5	2.5	6.7	89	15	K7900	K1300
MAY											
10...	1215	10	432	7.6	30.0	7.8	7.6	100	15	29000	2100
JUL											
09...	1555	11	486	7.9	30.0	5.1	4.6	61	18	390000	34000
AUG											
24...	0945	9.4	387	7.4	27.5	6.0	4.6	58	24	K17000	9000

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
12...	130	0	37	9.2	24	.9	3.4	131	17	28	.20
DEC											
12...	--	--	--	--	--	--	--	148	--	--	--
MAR , 1984											
19...	--	--	--	--	--	--	--	151	--	--	--
MAY											
10...	140	0	41	10	34	1	3.6	161	20	38	.20
JUL											
09...	--	--	--	--	--	--	--	153	--	--	--
AUG											
24...	140	0	41	9.6	26	1	3.4	147	19	30	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
12...	27	224	8.5	12	1.1	.16	1.3	.88	.22	1.1	2.4
DEC											
12...	--	--	--	24	1.5	.23	1.7	1.1	.40	1.5	3.2
MAR , 1984											
19...	--	--	--	4	1.1	.11	1.2	.21	1.7	1.9	3.1
MAY											
10...	28	270	7.3	18	.47	.13	.60	1.5	3.6	5.1	5.7
JUL											
09...	--	--	--	14	.92	.18	1.1	.94	.56	1.5	2.6
AUG											
24...	28	250	6.2	2	1.0	.16	1.2	.39	.81	1.2	2.4

K = non-ideal count

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RIO PUERTO NUEVO BASIN

50049100 RIO PIEDRAS AT HATO REY, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
OCT , 1983										
12...	11	.52	3	200	2	4	9	<.1	<1	<1
DEC										
12...	14	.95	--	--	--	--	--	--	--	--
MAR , 1984										
19...	14	.52	--	--	--	--	--	--	--	--
MAY										
10...	25	.80	2	100	2	3	14	1.1	<1	<1
JUL										
09...	12	.54	--	--	--	--	--	--	--	--
AUG										
24...	11	.47	--	--	--	--	--	--	--	--

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RIO PUERTO NUEVO BASIN

50049820 LAGUNA SAN JOSE NO. 2 AT SAN JUAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°25'46", long 66°02'10", 0.2 mi (0.3 km) east of Caño de Martín Peña, and 650 ft (200 m) south of Isla Guachinango.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKALINITY FIELD (MG/L AS CACO3)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
OCT , 1983 25...	0850	1.00	15500	8.4	29.5	4.4	61	K740	2700	100	44
DEC 06...	1030	1.00	18400	7.9	28.0	2.0	27	110000	9500	137	62
MAR , 1984 21...	1040	1.00	25000	8.8	27.0	8.6	117	47000	540	149	50
APR 12...	1335	1.00	30000	9.0	30.0	13.0	264	600	K170	166	53
JUL 11...	1115	1.00	21500	9.1	29.0	10.2	142	9900	510	131	26
AUG 31...	1125	1.00	19000	8.9	30.5	10.0	140	20000	500	135	10

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT , 1983 25...	.08	.02	.10	.63	3.9	4.5	4.6	20	.39	6.7
DEC 06...	--	.04	<.10	2.3	1.8	4.1	--	--	.61	14
MAR , 1984 21...	--	.03	<.10	.31	3.5	3.8	--	--	.61	10
APR 12...	--	.02	<.10	.14	5.1	5.2	--	--	.65	15
JUL 11...	.05	.05	.10	.79	.81	1.6	1.7	7.5	.31	13
AUG 31...	--	<.01	<.10	.08	2.6	2.7	--	--	.48	9.5

K = non-ideal count

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RIO PUERTO NUEVO BASIN

50049920 BAHIA DE SAN JUAN NO. 5 AT SAN JUAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°26 37", long 66°05'11", 0.4 mi (0.6 km) west of Puente de la Constitución, and 0.5 mi (0.8 km) south from U.S. Naval Reservation.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKALINITY FIELD (MG/L AS CACO3)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
OCT , 1983											
25...	1035	1.00	44300	8.0	29.5	4.4	67	K7000	K1000	123	98
DEC											
06...	1125	1.00	47400	8.0	28.5	5.2	79	2000	K600	124	222
MAR , 1984											
21...	1215	1.00	45100	8.1	28.0	5.1	77	37000	K180	138	116
APR											
12...	1155	1.00	44000	7.8	29.5	4.1	62	K2300000	41000	141	56
JUL											
11...	1300	1.00	14600	7.4	28.0	1.5	20	230000	74000	145	30
AUG											
31...	1350	1.00	15000	7.9	29.0	4.2	57	K180000	9800	91	24

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT , 1983										
25...	--	<.01	<.10	.57	.73	1.3	--	--	.28	4.0
DEC										
06...	.09	.01	.10	.42	.28	.70	.80	--	.20	4.0
MAR , 1984										
21...	--	.03	<.10	.75	.55	1.3	--	--	.35	3.8
APR										
12...	.05	.05	.10	1.4	.80	2.2	2.3	10	.57	4.0
JUL										
11...	--	<.01	<.10	.09	2.9	3.0	--	--	.45	7.4
AUG										
31...	--	.03	<.10	.49	.71	1.2	--	--	.30	4.0

K = non-ideal count

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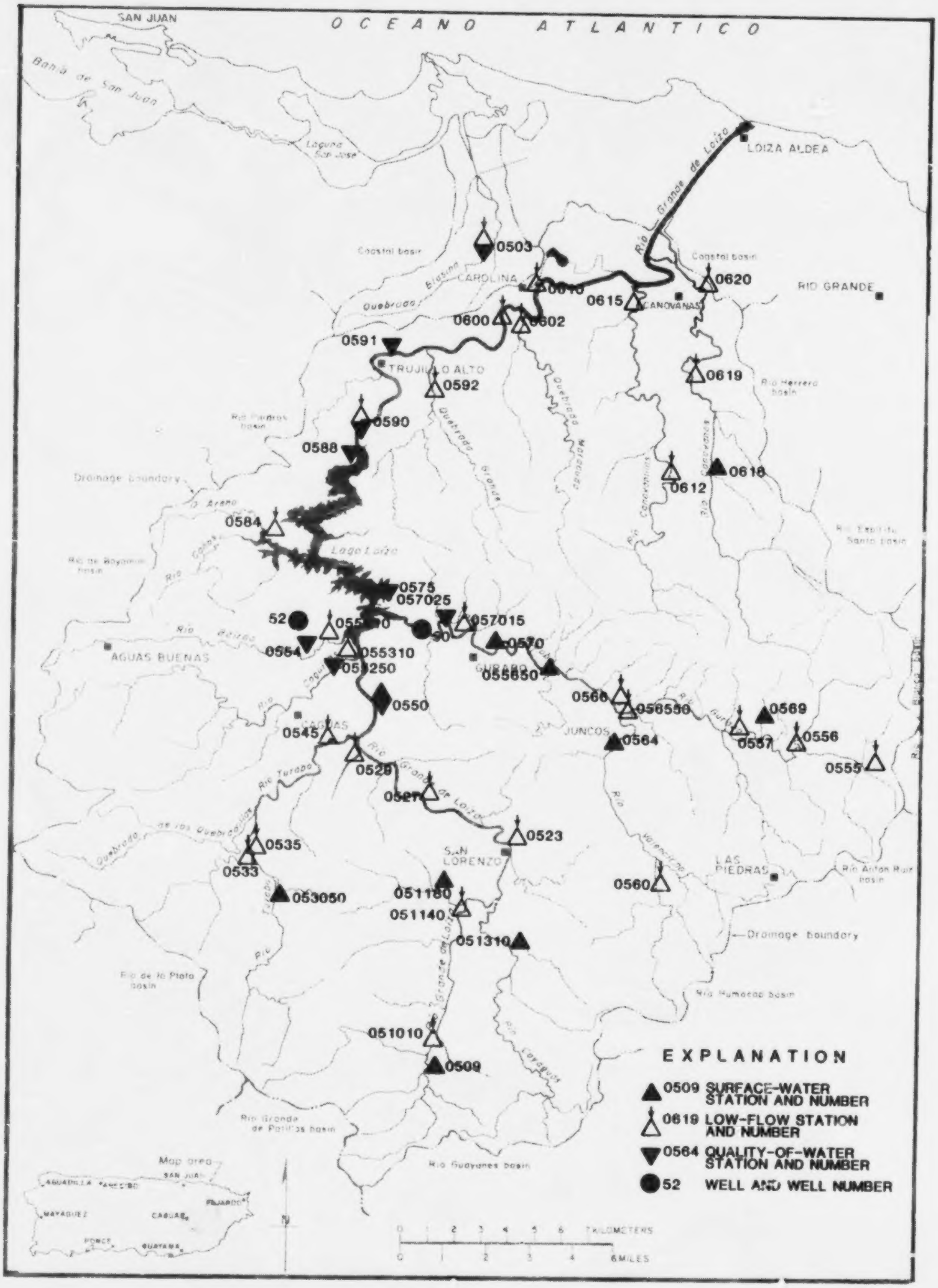
SAN JUAN
OCEANO ATLANTICO
Bahia de San Juan
Laguna San Jose
LOIZA ALDEA
Rio Grande de Loiza
Coastal basin
0503
CAROLINA
Quebrada Blasina
0610
0615
CANOVANAS
0620
RIO GRANDE
0600
0602
0591
TRUJILLO ALTO
0592
0619
Rio Herrero basin
Rio Piedras basin
0590
Quebrada Grande
Quebrada Maracuyo
0588
Rio Canovanillas
Rio Canovanas
Drainage boundary
0612
0618
Q. Arena
0584
Lago Loiza
Rio Espiritu Santo basin
Rio de Bayamon basin
Rio Cañas
0575
057025
52
057015
50
0570
Rio Bairoa
0554
055310
053250
AGUAS BUENAS
GURABO
055650
0550
0566
056550
Rio Gurabo
0569
0545
CAGUAS
JUNCOS
0564
0557
0556
0555
Rio Cagüitas
Rio Turabo
0529
Rio Grande de Loiza
0527
Quebrada de los Quebradillas
0523
0535
0533
SAN LORENZO
Rio Valenciano
LAS PIEDRAS
0560
Rio Anton Ruiz basin
053050
051180
051140
051310
Drainage boundary
Rio de la Plata basin
Rio Humacao basin
Rio Grande de Loiza
051010
Rio Cayaguas
0509
Rio Grande de Patillas basin
Rio Guayanes basin
Map area
SAN JUAN
AGUADILLA
ARECIBO
FAJARDO
MAYAGUEZ
CAGUAS
PONCE
GUAYAMA
N
0 1 2 3 4 5 6 KILOMETERS
0 1 2 3 4 6 MILES
EXPLANATION
▲ 0509 SURFACE-WATER STATION AND NUMBER
△ 0619 LOW-FLOW STATION AND NUMBER
▼ 0564 QUALITY-OF-WATER STATION AND NUMBER
● 52 WELL AND WELL NUMBER

Figure 17.--Río Grande de Loíza basin.

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RIO GRANDE DE LOIZA BASIN

50050300 QUEBRADA BLASINA NEAR CAROLINA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°23'27", long 65°58'28", at bridge on Highway 3, 1.4 mi (2.3 km) south of Valle Arriba Heights housing area, and 1.2 mi (1.9 km) west-southwest of Carolina plaza.

DRAINAGE AREA.--2.96 sq mi (7.67 sq km).

PERIOD OF RECORD.--Water years 1973 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT, 1983											
12...	0950	5.6	538	7.2	23.5	<1.0	.0	0	130	K6400000	5200000
DEC											
08...	0905	7.6	586	7.2	25.0	5.3	.0	0	100	K1000000	2400000
MAR, 1984											
15...	0935	5.2	556	7.7	25.5	53	.4	5	67	3700000	4300000
MAY											
02...	1445	4.0	679	7.4	29.5	2.4	.0	0	100	11000000	4400000
JUN											
28...	1410	6.9	505	7.2	30.0	3.3	8.0	106	88	2800000	28000
AUG											
22...	1000	6.4	493	7.4	29.0	5.5	1.2	15	43	K1800000	K190000

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT, 1983											
12...	150	0	48	8.4	45	2	5.7	184	19	49	.20
DEC											
08...	--	--	--	--	--	--	--	174	--	--	--
MAR, 1984											
15...	--	--	--	--	--	--	--	184	--	--	--
MAY											
02...	150	0	46	9.1	56	2	6.5	201	24	74	.20
JUN											
28...	--	--	--	--	--	--	--	174	--	--	--
AUG											
22...	140	0	42	8.0	39	2	6.2	169	28	45	.20

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT, 1983											
12...	29	310	4.8	6	--	<.01	<.10	7.9	8.1	16	--
DEC											
08...	--	--	--	22	--	.04	<.10	8.4	5.6	14	--
MAR, 1984											
15...	--	--	--	60	--	.02	<.10	8.0	3.0	11	--
MAY											
02...	24	360	3.8	12	--	.02	<.10	8.8	6.2	16	--
JUN											
28...	--	--	--	14	.09	.01	.10	9.9	2.1	12	12
AUG											
22...	19	290	5.0	54	.77	.13	.90	6.0	2.5	8.5	9.4

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50050300 QUEBRADA BLASINA NEAR CAROLINA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
12...	--	.26	4	200	1	2	2	<.1	<1	<1
DEC										
08...	--	.22	--	--	--	--	--	--	--	--
MAR , 1984										
15...	--	1.6	--	--	--	--	--	--	--	--
MAY										
02...	--	3.3	2	<100	1	1	7	.3	<1	<1
JUN										
28...	53	3.0	--	--	--	--	--	--	--	--
AUG										
22...	42	1.7	--	--	--	--	--	--	--	--

RIO GRANDE DE LOIZA BASIN

50050900 RIO GRANDE DE LOIZA AT QUEBRADA ARENAS, PR

LOCATION.--Lat 18°07'10", long 65°59'22", Hydrologic Unit 21010005, at intersection of Highways 181 and 9990, 0.2 mi (0.3 km) above confluence with Río Emajagua and about 7.1 mi (11.4 km) southwest of San Lorenzo.

DRAINAGE AREA.--6.00 sq mi (15.54 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 175 ft (53.3 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--7 years (1978-84), 30.6 cu ft/s (0.866 cu m/s), 69.26 in/yr (1,759 mm/yr), 22,170 acre-ft/yr (27.3 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 cu ft/s (331 cu m/s) Nov. 5, 1983, gage height 14.78 ft (4.505 m), from rating curve extended above 500 cu ft/s (14.2 cu m/s) on basis of step-backwater analysis; minimum, 2.8 cu ft/s (0.079 cu m/s) May 5,6, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 cu ft/s (56.6 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 5	1845	*11,700	331	14.78	4.505
Feb. 15	2030	4,410	125	10.46	3.188
June 10	0515	2.850	80.7	9.11	2.777
June 10	0815	2,590	73.3	8.85	2.697
Sept. 17	1345	2,600	73.6	8.86	2.700
Sept. 20	0715	2,880	81.6	9.14	2.786

Minimum discharge, 4.2 cu ft/s (0.119 cu m/s) May 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	40	12	23	8.7	16	7.8	5.4	31	33	14	24
2	24	15	191	14	8.6	13	7.2	5.5	15	21	18	15
3	21	16	23	13	12	13	7.5	5.4	12	18	13	45
4	19	289	18	12	17	12	7.2	5.5	17	63	50	18
5	17	736	16	11	14	11	7.6	5.2	21	157	18	34
6	16	119	19	11	14	12	8.0	6.0	75	32	15	21
7	16	41	15	11	12	11	8.1	5.5	134	24	13	15
8	15	31	15	10	9.5	11	7.5	5.1	40	21	12	14
9	30	27	14	12	9.2	12	7.1	5.2	24	20	12	13
10	16	23	14	21	13	9.5	7.2	7.4	369	19	11	23
11	15	22	15	11	10	8.9	7.5	5.4	44	19	11	18
12	17	20	14	12	107	8.7	6.9	5.2	45	15	11	44
13	34	19	13	69	87	9.0	6.4	6.1	44	18	10	42
14	19	18	12	49	33	16	6.4	5.7	32	24	9.9	56
15	23	17	14	17	372	9.1	6.4	5.3	24	21	11	25
16	17	18	15	17	137	8.7	6.4	4.9	31	18	12	36
17	14	17	14	32	36	9.4	6.6	4.6	25	17	11	207
18	28	16	14	22	25	8.8	6.2	4.6	21	16	9.9	132
19	23	15	12	15	21	8.3	6.1	5.4	21	16	9.9	77
20	15	15	12	30	18	8.0	6.5	5.1	20	16	10	302
21	16	15	11	15	17	7.8	7.6	4.8	19	18	9.8	82
22	19	14	12	17	17	8.3	7.6	5.4	19	17	10	44
23	13	14	12	13	16	9.3	7.1	6.7	18	18	9.9	37
24	12	14	11	12	15	7.8	6.4	5.3	17	16	9.9	30
25	12	13	11	15	15	7.5	6.0	9.9	17	14	9.8	28
26	15	12	11	13	14	7.4	5.9	21	16	16	29	24
27	12	13	12	11	15	7.1	7.6	18	16	16	21	22
28	11	12	16	11	13	6.7	7.4	14	16	14	12	22
29	16	13	13	9.8	13	7.7	5.7	12	17	35	11	27
30	20	13	24	9.4	---	7.1	5.5	106	21	19	13	31
31	13	---	41	8.9	---	6.7	---	26	---	14	14	---
TOTAL	575	1647	646	544.1	1099.0	296.8	207.4	337.6	1221	788	431.1	1508
MEAN	18.5	54.9	20.8	17.6	37.9	9.57	6.91	10.9	40.7	25.4	13.9	50.3
MAX	37	736	191	69	372	16	8.1	106	369	157	50	302
MIN	11	12	11	8.9	8.6	6.7	5.5	4.6	12	14	9.8	13
CFSM	3.08	9.15	3.47	2.93	6.32	1.60	1.15	1.82	6.78	4.23	2.32	8.38
IN.	3.56	10.21	4.00	3.37	6.81	1.84	1.29	2.09	7.57	4.88	2.67	9.35
AC-FT	1140	3270	1280	1080	2180	589	411	670	2420	1560	855	2990

CAL YR 1983 TOTAL 10468.6 MEAN 28.7 MAX 736 MIN 4.9 CFSM 4.78 IN 64.89 AC-FT 20760
WTR YR 1984 TOTAL 9301.0 MEAN 25.4 MAX 736 MIN 4.6 CFSM 4.23 IN 57.66 AC-FT 18450

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RIO GRANDE DE LOIZA BASIN

50050900 RIO GRANDE DE LOIZA AT QUEBRADA ARENAS, PR—Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1951 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 12	1045	14	139	25.5
NOV, 07	1508	39	172	26.0
DEC, 14	1300	12	153	24.0
JAN, 13	1217	26	158	23.5
FEB, 15	1306	79	59	22.5
MAR, 09	1023	16	145	22.0
MAR, 28	1606	7.3	155	28.0
APR, 11	1245	7.4	152	27.5
MAY, 21	1501	4.7	162	29.0
JUN, 14	1235	34	125	29.0
AUG, 15	1030	12	145	28.0

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RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR

LOCATION.--Lat 18°10'24", long 65°58'38", Hydrologic Unit 21010005, on left downstream side of bridge on Highway 181, 0.2 mi (0.3 km) upstream from Río Grande de Loíza, and 1.5 mi (2.4 km) southwest of San Lorenzo.

DRAINAGE AREA.--3.74 sq mi (9.69 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to September, 1984.

GAGE.--Water-stage recorder. Altitude of gage is 330 ft (100 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 1,000 cu ft/s (28.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Feb. 15	1930	1,430	40.5	9.31	2.838	June 10	0700	*6,300	178	15.12	4.609

Minimum discharge, 0.69 cu ft/s (0.020 cu m/s) Apr. 9-13, 15,16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				2.0	1.7	1.6	.86	.96	1.8	1.9	4.1	2.2
2				1.8	1.5	1.6	.86	.93	1.5	2.3	6.2	1.8
3				1.7	1.5	1.6	.86	.97	1.2	1.4	1.4	1.7
4				1.6	1.9	1.5	.91	1.0	1.3	30	6.6	1.9
5				1.5	1.6	1.5	.80	.93	1.2	64	2.3	16
6				1.5	1.5	1.5	.82	.93	10	6.2	1.3	5.4
7				1.5	1.5	1.5	.84	.97	26	2.8	1.1	2.7
8				1.5	1.5	1.4	.85	1.0	9.8	2.0	.99	2.1
9				1.6	1.9	1.4	.74	.97	5.3	1.7	.95	2.2
10				1.8	4.2	1.4	.71	1.1	295	1.8	.86	2.6
11				1.6	3.7	1.3	.72	1.2	15	1.5	.83	2.3
12				3.2	8.8	1.3	.71	1.1	7.0	1.3	.83	4.7
13				14	33	1.3	.72	1.8	20	1.1	.82	19
14				12	11	1.4	.74	2.1	9.9	1.5	.82	86
15				3.8	106	1.3	.74	1.4	5.9	1.5	.84	10
16				2.6	88	1.2	.73	1.3	5.9	1.2	1.0	11
17				2.0	6.6	1.2	.77	1.2	5.3	1.1	.92	24
18				1.7	3.3	1.2	.80	1.1	3.8	.97	.89	54
19				1.7	2.3	1.2	.79	1.1	3.2	1.0	.89	41
20				14	1.9	1.1	.80	1.1	2.6	1.1	1.1	95
21				3.5	1.7	1.1	.86	1.1	2.3	1.6	1.0	38
22				1.8	1.6	1.1	.93	1.0	2.1	1.3	.87	13
23				1.7	1.6	1.2	.93	1.1	1.8	1.2	.87	7.3
24				1.8	1.6	1.2	.93	1.1	1.7	1.0	.82	5.2
25				1.8	1.6	1.1	.90	2.0	1.6	.98	.34	4.2
26				1.7	1.6	1.0	.93	14	1.8	1.1	2.8	3.7
27				1.7	1.7	1.0	1.4	2.1	1.5	.98	3.8	3.4
28				1.9	1.7	.97	1.7	2.2	1.4	.99	2.4	3.7
29				1.7	1.6	.96	1.1	1.5	2.0	1.7	1.7	3.1
30				1.6	---	.91	1.0	18	1.6	2.3	16	5.0
31				1.6	---	.88	---	3.1	---	1.3	4.1	---
TOTAL				93.9	298.1	38.92	26.35	70.36	449.5	140.32	69.94	472.2
MEAN				3.03	10.3	1.26	.88	2.27	15.0	4.54	2.26	15.7
MAX				14	106	1.6	1.7	18	295	64	16	95
MIN				1.5	1.5	.88	.71	.93	1.2	.97	.82	1.7
CFSM				.81	2.75	.34	.24	.61	4.01	1.21	.60	4.20
IN.				.93	2.96	.39	.26	.70	4.47	1.40	.70	4.70
AC-FT				186	591	77	52	140	892	279	139	937

WATER QUALITY RECORDS

PERIOD OF RECORD.--FEBRUARY TO SEPTEMBER 1984

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
FEB, 09	1125	1.4	463	23.0	JUN, 14	1011	18	24	28.0
MAR, 08	1000	1.4	412	23.5	AUG, 15	1320	0.9	243	30.5
MAY, 17	1130	1.2	414	29.0					

RIO GRANDE DE LOIZA BASIN

50051310 RIO CAYAGUAS AT CERRO GORDO, PR

LOCATION.--Lat 18°09'13", long 65°57'20", Hydrologic Unit 21010005, at downstream side on bridge on Highway 912, at Barrio Cerro Gordo, 2.8 mi (4.5 km) south of San Lorenzo.

DRAINAGE AREA.--10.2 sq mi (26.4 sq km).

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 490 ft (150 m), from topographic map. Prior to Oct. 1, 1983, at site 2,000 ft (610 m) downstream at different datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--7 years (1978-84), 47.9 cu ft/s (1.356 cu m/s), 63.77 in/yr (1,620 mm/yr), 34,700 acre-ft/yr (42.8 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,200 cu ft/s (374 cu m/s), Aug. 31, 1979, gage height 9.44 ft (2.877 m) site and datum then in use, from rating curve extended above, 1,000 cu ft/s (28.3 cu m/s) on the basis of slope-area measurement; minimum discharge, 7.1 cu ft/s (0.201 cu m/s), Feb. 4, May 3, 1981, Apr. 12, 13, 16, 17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 cu ft/s (70.8 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 5	1915	2,940	83.3	13.83	4.215	June 10	0800	3,030	85.8	13.97	4.258
Feb. 15	2045	*4,530	128	15.98	4.871						

Minimum daily discharge, 11 cu ft/s (0.312 cu m/s) Apr. 30, May 1-5, 7-9, 11,12, 15-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	188	29	35	27	22	16	11	51	35	32	19
2	33	54	306	26	26	22	15	11	26	34	43	18
3	29	29	52	24	29	22	15	11	21	27	28	18
4	27	440	39	23	32	21	15	11	27	126	105	27
5	27	478	36	22	29	21	15	11	20	167	33	46
6	27	194	39	22	31	22	15	12	44	38	23	43
7	29	74	34	22	30	21	15	11	195	29	24	21
8	29	52	28	21	27	22	14	11	74	25	23	21
9	41	42	25	24	27	26	14	11	42	25	22	18
10	31	37	26	38	30	24	13	13	542	24	20	22
11	27	35	26	22	29	22	13	11	99	24	21	47
12	27	33	24	24	100	23	13	11	62	24	21	39
13	31	32	23	130	129	25	13	12	72	24	21	64
14	31	32	23	85	48	37	13	12	47	26	25	155
15	31	33	26	40	567	29	13	11	34	26	22	41
16	33	32	33	35	464	31	13	11	66	24	25	29
17	25	30	31	33	52	36	14	11	48	23	19	118
18	23	30	31	33	32	30	13	11	37	23	19	89
19	37	30	29	31	25	25	13	11	37	24	21	70
20	22	30	32	49	23	23	12	11	33	25	18	332
21	22	30	25	33	23	21	13	12	32	27	19	94
22	25	29	23	37	22	20	13	12	30	30	16	46
23	21	29	23	32	22	22	13	17	29	31	17	37
24	20	29	22	31	22	19	12	13	28	26	14	33
25	20	28	22	38	22	18	12	26	26	24	14	31
26	24	28	22	34	22	17	12	30	27	24	17	31
27	20	29	23	32	23	17	13	19	27	24	51	30
28	19	28	29	33	23	17	17	27	27	23	22	36
29	25	28	25	29	22	18	13	27	28	27	18	32
30	31	27	40	28	---	17	11	132	34	34	20	40
31	21	---	75	27	---	16	---	39	---	25	18	---
TOTAL	861	2190	1221	1093	1958	706	406	579	1865	1069	791	1647
MEAN	27.8	73.0	39.4	35.3	67.5	22.8	13.5	18.7	62.2	34.5	25.5	54.9
MAX	53	478	306	130	567	37	17	132	542	167	105	332
MIN	19	27	22	21	22	16	11	11	20	23	14	18
CFSM	2.73	7.16	3.86	3.46	6.62	2.24	1.32	1.83	6.10	3.38	2.50	5.38
IN.	3.14	7.99	4.45	3.99	7.14	2.57	1.48	2.11	6.80	3.90	2.88	6.01
AC-FT	1710	4340	2420	2170	3880	1400	805	1150	3700	2120	1570	3270

CAL YR 1983 TOTAL 14951.4 MEAN 41.0 MAX 806 MIN 8.2 CFSM 4.02 IN 54.52 AC-FT 29660
WTR YR 1984 TOTAL 14386.0 MEAN 39.3 MAX 567 MIN 11 CFSM 3.85 IN 52.46 AC-FT 28530

RIO GRANDE DE LOIZA BASIN

50051310 RIO CAYAGUAS AT CERRO GORDO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT, 12	1236	27	125	27.0
NOV, 07	1244	73	106	25.5
DEC, 14	1030	26	140	22.0
JAN, 19	0937	32	219	22.0
FEB, 16	1043	190	59	21.5
MAR, 09	1320	28	128	26.0
MAR, 23	1400	17	132	29.0
APR, 11	1610	14	135	29.0
MAY, 21	1246	12	148	30.0
JUN, 13	1108	93	98	28.5
AUG, 16	1310	26	123	29.5

RIO GRANDE DE LOIZA BASIN

50053050 RIO TURABO AT BORINQUEN, PR

LOCATION.--Lat 18°10'10", long 66°02'37", Hydrologic Unit 21010005, at right upstream end of bridge on Highway 765, 0.5 mi (0.8 km) south of Villa Borinquen, and 7.3 mi (11.7 km) upstream from Río Grande de Loíza.

DRAINAGE AREA.--7.89 sq mi (20.4 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1983 to September 1984.

GAGE.--Water-stage recorder. Altitude of gage is 430 ft (130 m) , from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 1,500 cu ft/s (42.5 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Feb. 15	2145	*2,650	75.0	9.75	2.972
June 10	0600	2,180	61.7	9.14	2.786
July 5	0130	1,740	49.3	8.52	2.597

Minimum discharge, 5.9 cu ft/s (0.167 cu m/s) Apr. 28,29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			10	11	7.4	13	11	7.3	31	19	6.4	10
2			140	9.1	7.1	13	11	8.1	26	17	16	10
3			30	8.5	7.6	12	12	8.5	20	12	10	19
4			15	8.5	9.8	12	13	7.7	16	110	28	15
5			13	8.4	7.4	13	15	7.4	14	396	19	69
6			18	9.6	7.0	13	14	7.3	25	41	17	31
7			14	8.8	7.4	13	11	7.0	53	29	16	15
8			12	8.8	6.6	13	9.9	7.0	43	26	16	11
9			11	9.2	18	13	9.7	8.6	29	25	15	13
10			11	9.3	27	13	9.3	9.8	430	24	14	11
11			12	9.1	20	12	9.7	8.7	50	23	14	11
12			10	11	116	12	8.4	9.3	33	22	10	14
13			9.5	89	184	12	8.2	18	44	20	11	14
14			9.0	36	50	14	9.1	9.9	28	22	9.9	25
15			9.0	23	325	12	9.0	9.4	21	20	11	19
16			9.5	19	208	12	8.6	8.5	96	18	11	23
17			9.5	25	33	13	8.8	8.9	29	17	9.1	96
18			10	29	23	12	8.0	7.2	19	18	8.2	87
19			9.0	22	19	12	7.7	7.0	26	16	8.2	74
20			8.5	48	17	12	8.2	8.0	17	18	8.9	128
21			8.2	28	16	12	9.0	8.8	15	23	8.9	49
22			8.6	24	16	13	9.6	10	14	22	7.4	25
23			8.4	15	15	16	12	22	13	24	7.4	19
24			8.1	9.2	14	15	11	20	11	17	6.9	17
25			7.8	24	14	13	11	26	11	17	6.8	16
26			7.8	11	14	16	7.7	52	11	15	27	15
27			7.8	8.4	14	18	14	38	10	12	20	15
28			7.9	12	14	17	7.3	36	10	10	11	14
29			9.2	8.1	14	17	6.3	37	11	16	8.1	14
30			16	7.9	---	16	6.6	101	13	16	10	15
31			16	7.6	---	12	---	37	---	8.0	10	---
TOTAL			475.8	557.5	1231.3	416	296.1	561.7	1169	1073.0	382.2	894
MEAN			15.3	18.0	42.5	13.4	9.87	18.1	39.0	34.6	12.3	29.8
MAX			140	89	325	18	15	101	430	396	28	128
MIN			7.8	7.6	6.6	12	6.3	7.0	10	8.0	6.4	10
CFSM			1.94	2.28	5.39	1.70	1.25	2.29	4.94	4.39	1.56	3.78
IN.			2.24	2.63	5.80	1.96	1.40	2.65	5.51	5.06	1.80	4.21
AC-FT			944	1110	2440	825	587	1110	2320	2130	758	1770

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RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR

LOCATION .--Lat 18°14'33", long 66°00'34", Hydrologic Unit 21010005, on right bank 250 ft (76 m) upstream from bridge on Highway 189, 1.2 mi (1.9 km) downstream from Río Turabo, and 1.8 mi (2.9 km) east of Plaza de Caguas.

DRAINAGE AREA.--89.8 sq mi (232.6 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1959 (low-flow measurement only), February to November 1959 (monthly measurements only), December 1959 to current year.

GAGE.--Water-stage recorder.--Datum of gage is 143.28 ft (43.672 m) above mean sea level (datum of 1941).

REMARKS.--Records fair.

AVERAGE DISCHARGES.--24 years (1961-84), 218 cu ft/s (6.174 cu m/s), 32.97 in/yr (837 mm/yr), 157,900 acre-ft/yr (195 cu hm/yr); median of yearly mean discharges, 208 cu ft/s (5.89 cu m/s), 151,000 acre-ft/yr (186 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,500 cu ft/s (2,025 cu m/s) Sept. 6, 1960, gage height, 31.17 ft (9.501 m), from rating curve extended above 6,000 cu ft/s (170 cu m/s) on basis of slope-area measurement; minimum daily discharge, 10 cu ft/s (0.283 cu m/s) Apr. 5, 10, 29, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,000 cu ft/s (227 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 5	unknown	*29,100	824	21.72	6.620
Feb. 15	2215	14,500	411	16.77	5.111

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
June 10	0845	24,300	688	20.26	6.175
Sept. 20	0900	8,080	229	13.79	4.203

Minimum discharge, 26 cu ft/s (0.736 cu m/s) May 17-19,22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	340	187	100	124	66	89	48	34	158	120	94	90
2	191	193	1330	83	67	85	44	33	124	142	247	93
3	277	110	219	73	67	82	46	33	85	90	100	84
4	165	2390	139	75	85	82	44	34	97	380	277	148
5	122	6500	122	74	82	77	47	34	72	1900	172	408
6	110	1700	165	70	51	81	50	33	262	276	100	283
7	110	400	127	70	77	76	51	36	668	171	87	113
8	109	286	114	71	72	74	46	35	343	138	77	87
9	150	225	105	72	109	78	43	35	178	132	74	93
10	122	196	103	93	137	81	44	44	4100	121	72	131
11	104	175	108	74	125	70	46	42	463	110	68	178
12	108	160	98	67	293	66	45	36	239	102	65	176
13	115	150	90	356	951	67	41	67	445	92	62	319
14	137	141	86	340	307	86	38	71	255	116	61	957
15	117	136	87	143	1830	72	38	50	173	131	61	253
16	150	140	91	107	2300	70	35	39	270	92	73	322
17	110	131	91	131	324	70	35	32	264	83	65	781
18	103	124	94	122	211	75	35	30	153	79	58	983
19	151	122	86	115	166	63	34	31	150	76	56	716
20	99	116	82	207	142	58	34	30	131	79	61	1720
21	113	110	82	135	129	56	38	30	116	86	66	673
22	137	107	80	109	119	59	42	30	105	102	57	326
23	94	103	88	93	110	71	35	63	95	104	55	243
24	84	102	79	86	104	62	34	55	90	85	53	197
25	81	102	75	107	100	55	31	80	87	77	50	173
26	87	100	75	87	98	53	40	202	86	73	128	157
27	79	97	80	87	97	52	80	136	81	82	300	146
28	74	96	82	83	94	49	104	139	77	71	111	152
29	86	93	82	77	99	48	46	102	95	39	76	135
30	136	103	100	71	---	45	37	713	103	172	436	177
31	121	---	114	68	---	47	---	245	---	93	149	---
TOTAL	3972	14593	4374	3473	8434	2103	1331	2574	9565	5464	3411	10314
MEAN	128	486	141	112	291	67.8	44.4	83.0	319	176	110	344
MAX	340	6500	1330	354	2300	89	106	713	4100	1900	436	1720
MIN	74	93	75	67	66	47	31	30	72	71	50	84
CFSM	1.43	5.41	1.57	1.25	3.24	.76	.49	.92	3.55	1.96	1.23	3.83
IN.	1.65	6.05	1.81	1.44	3.49	.87	.55	1.07	3.96	2.26	1.41	4.27
AC-FT	7880	28950	8680	6890	16730	4170	2640	5110	18970	10840	6770	20460

CAL YR 1983 TOTAL 82258 MEAN 225 MAX 6500 MIN 35 CFSM 2.51 IN 34.08 AC-FT 163200
WTR YR 1984 TOTAL 69608 MEAN 190 MAX 6500 MIN 30 CFSM 2.12 IN 28.84 AC-FT 138100

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
04...	1300	156	209	7.4	27.0	60	7.6	96	13	20000	6000
DEC											
13...	1105	91	243	7.4	24.5	3.9	8.6	104	<10	41000	590
MAR , 1984											
13...	1210	64	245	7.9	26.0	7.5	8.0	99	12	600	K50
APR											
24...	1050	40	253	7.4	27.5	18	7.9	100	<10	K1300	120
JUN											
25...	1220	89	226	7.6	30.0	7.9	7.4	98	<10	K2000	40
AUG											
14...	1315	61	239	7.6	31.5	2.5	6.7	117	<10	260	230

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
04...	61	0	15	5.3	17	1	2.3	65	12	15	.20
DEC											
13...	--	--	--	--	--	--	--	74	--	--	--
MAR , 1984											
13...	--	--	--	--	--	--	--	77	--	--	--
APR											
24...	70	0	18	6.1	23	1	2.0	75	19	27	.20
JUN											
25...	--	--	--	--	--	--	--	73	--	--	--
AUG											
14...	67	0	17	6.0	22	1	2.0	71	20	21	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
04...	32	140	58	98	.58	.02	.60	.11	1.3	1.4	2.0
DEC											
13...	--	--	--	25	.72	.08	.80	.15	.05	.20	1.0
MAR , 1984											
13...	--	--	--	9	.52	.08	.60	.28	.42	.70	1.3
APR											
24...	32	170	18	21	.52	.08	.60	.32	1.2	1.5	2.1
JUN											
25...	--	--	--	14	.31	.09	.40	.06	.04	.10	.50
AUG											
14...	31	160	27	11	.45	.05	.50	.14	.56	.70	1.2

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
04...	8.9	.22	4	100	4	4	7	<.1	<1	<1
DEC										
13...	4.4	.16	--	--	--	--	--	--	--	--
MAR , 1984										
13...	5.8	.24	--	--	--	--	--	--	--	--
APR										
24...	9.3	.38	1	<100	1	3	4	.2	<1	<1
JUN										
25...	2.2	.04	--	--	--	--	--	--	--	--
AUG										
14...	5.3	.22	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
JAN, 13	1335	86	279	28.0	APR, 24	1021	40	244	28.0
MAR, 08	1247	73	235	26.0	MAY, 18	0935	34	293	29.0
APR, 13	1540	54	259	30.5	JUL, 26	1304	70	223	29.5

RIO GRANDE DE LOIZA BASIN

50055250 RIO CAGUITAS AT HIGHWAY 30 AT CAGUAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'11", long 66°01'26", at Highway 30 bridge, and 0.8 mi (1.3 km) east of Caguas plaza.

DRAINAGE AREA.--14.1 sq mi (36.5 sq km).

PERIOD OF RECORD.--Water years 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
13...	1450	9.0	528	7.6	30.0	3.4	7.0	93	14	K200000	K9100
DEC											
13...	1345	12	725	7.6	27.5	16	.6	8	80	2300000	220000
MAR , 1984											
12...	1255	8.3	720	7.7	27.5	9.3	7.8	99	97	K740000	220000
APR											
25...	1440	3.5	718	7.6	29.5	2.5	6.6	87	15	310000	K11000
JUN											
26...	1425	5.8	654	7.6	32.0	2.1	15.2	209	22	250000	5300
AUG											
23...	1245	6.7	651	7.6	30.5	1.7	6.8	91	22	230000	K8000

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
13...	190	56	51	15	33	1	3.0	133	63	37	.20
DEC											
13...	--	--	--	--	--	--	--	194	--	--	--
MAR , 1984											
12...	--	--	--	--	--	--	--	175	--	--	--
APR											
25...	230	78	71	14	47	1	3.4	157	140	54	.40
JUN											
26...	--	--	--	--	--	--	--	153	--	--	--
AUG											
23...	210	52	60	14	44	1	4.4	156	100	50	.40

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
13...	36	320	7.7	3	.54	.06	.60	.29	.31	.60	1.2
DEC											
13...	--	--	--	34	2.0	.48	2.5	7.8	4.2	12	15
MAR , 1984											
12...	--	--	--	18	2.2	.14	2.3	4.0	4.0	8.0	10
APR											
25...	33	460	.65	6	.10	.10	.20	2.6	2.4	5.0	5.2
JUN											
26...	--	--	--	6	.92	.18	1.1	1.9	2.0	3.9	5.0
AUG											
23...	32	400	7.2	4	.14	.06	.20	3.30	.90	4.2	4.4

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50055250 RIO CAGUITAS AT HIGHWAY 30 AT CAGUAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
13...	5.3	.49	1	<100	<1	7	2	<.1	<1	<1
DEC										
13...	64	.35	--	--	--	--	--	--	--	--
MAR , 1984										
12...	45	1.2	--	--	--	--	--	--	--	--
APR										
25...	23	.81	3	100	1	3	2	<.1	<1	<1
JUN										
26...	22	.09	--	--	--	--	--	--	--	--
AUG										
23...	12	.09	--	--	--	--	--	--	--	--

RIO GRANDE DE LOIZA BASIN

50055400 RIO BAIROA NEAR CAGUAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'28", long 66°02'13", at bridge on Highway 1, about 2.5 mi (4.0 km) upstream from Río Grande de Loíza, and 1.4 mi (2.3 km) north of Caguas plaza.

DRAINAGE AREA.--5.4 sq mi (14.0 sq km).

PERIOD OF RECORD.--Water years 1958, 1962-66, 1973-74, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT, 1983											
14...	1000	2.3	447	7.6	25.0	2.4	5.2	63	27	54000	5700
DEC											
15...	1255	3.3	430	7.6	25.0	4.1	7.0	85	10	K190000	9700
MAR, 1984											
12...	1110	3.3	600	7.7	25.5	13	5.2	64	130	K2200000	460000
APR											
26...	1020	1.2	466	7.4	26.0	1.5	3.3	41	17	24000	7200
JUN											
25...	1530	2.0	479	7.4	31.0	5.2	8.6	116	13	24000	2300
AUG											
22...	1305	2.5	436	7.6	29.0	1.5	5.0	64	57	K120000	7400

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT, 1983											
14...	150	15	35	15	28	1	4.5	134	17	46	.30
DEC											
16...	--	--	--	--	--	--	--	143	--	--	--
MAR, 1984											
12...	--	--	--	--	--	--	--	179	--	--	--
APR											
26...	160	2	37	17	30	1	5.5	161	17	47	.30
JUN											
25...	--	--	--	--	--	--	--	153	--	--	--
AUG											
22...	150	10	35	15	33	1	7.1	139	25	45	.30

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT, 1983											
14...	33	260	1.6	4	2.0	.05	2.0	.25	.35	.60	2.6
DEC											
16...	--	--	--	8	2.5	.08	2.6	.38	.72	1.1	3.7
MAR, 1984											
12...	--	--	--	19	.94	.06	1.0	7.0	1.5	8.5	9.5
APR											
26...	33	280	.92	2	.95	.05	1.0	.16	.92	1.1	2.1
JUN											
25...	--	--	--	13	1.8	.07	1.9	.14	.36	.50	2.4
AUG											
22...	31	270	1.9	10	2.4	.09	2.5	.57	.73	1.3	3.8

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50055400 RIO BAIROA NEAR CAGUAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
14...	12	.78	3	100	<1	4	3	<.1	<1	<1
DEC										
16...	16	.83	--	--	--	--	--	--	--	--
MAR , 1984										
12...	42	4.4	--	--	--	--	--	--	--	--
APR										
26...	9.3	.90	4	100	1	1	2	.4	<1	<1
JUN										
25...	11	.93	--	--	--	--	--	--	--	--
AUG										
22...	17	1.3	--	--	--	--	--	--	--	--

RIO GRANDE DE LOIZA BASIN

50055650 QUEBRADA CAIMITO NEAR JUNCOS, PR

LOCATION.--Lat 18°14'08", long 65°52'12", Hydrologic Unit 21010005, at upstream side of bridge on Highway 31, 0.5 mi (0.8 km) upstream from Río Gurabo, and 3.5 mi (5.6 km) east of Juncos.

DRAINAGE AREA.--0.82 sq mi (2.12 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to September, 1984.

GAGE.--Water-stage recorder. Altitude of gage is 310 ft (95 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 150 cu ft/s (4.25 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 20	0730	*228	6.457	9.79	2.984

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				---	.00	.00	.00	.00	.09	.17	.44	.00
2				---	.00	.00	.00	.00	.07	.07	1.3	.00
3				---	.00	.00	.00	.00	.03	.00	.49	.00
4				---	.00	.00	.00	.00	.00	.95	.27	.00
5				---	.00	.00	.00	.00	.00	1.9	.16	.13
6				---	.00	.00	.00	.00	.00	.94	.01	.15
7				---	.17	.00	.00	.00	.32	.48	.00	.00
8				---	.03	.00	.00	.00	.36	.23	.00	.00
9				---	.30	.00	.00	.00	.19	.11	.00	.00
10				---	.33	.00	.00	.00	.65	.01	.00	.00
11				---	.32	.00	.00	.00	.49	.00	.00	.00
12				---	.35	.00	.00	.00	.28	.00	.00	.34
13				---	1.5	.00	.00	.00	.17	.00	.00	1.6
14				---	.57	.00	.00	.00	.11	.00	.00	1.4
15				---	2.2	.00	.00	.00	.00	.00	.00	.77
16				---	3.3	.00	.00	.00	.00	.00	.00	5.8
17				---	.77	.00	.00	.00	.00	.00	.00	4.6
18				---	.44	.00	.00	.00	.00	.00	.00	3.5
19				---	.29	.00	.00	.00	.00	.00	.00	2.6
20				---	.18	.00	.00	.00	.00	.00	.00	17
21				---	.10	.00	.00	.00	.00	.00	.00	7.0
22				---	.01	.00	.00	.00	.00	.00	.00	2.8
23				---	.00	.00	.00	.00	.00	.00	.00	1.4
24				---	.00	.00	.00	.00	.00	.00	.00	.94
25				.00	.00	.00	.00	.00	.00	.00	.00	.72
26				.00	.00	.00	.00	.00	.00	.00	7.4	.58
27				.00	.00	.00	.01	.00	.00	.00	2.4	.47
28				.00	.00	.00	.09	.41	.00	.00	.52	.46
29				.00	.00	.00	.00	.05	1.2	1.4	.27	.41
30				.00	---	.00	.00	.16	.56	.56	.13	.43
31				.00	---	.00	---	1.2	---	.15	.09	---
TOTAL				---	10.38	.00	.10	1.82	4.52	6.97	13.48	53.10
MEAN				---	.38	.000	.003	.059	.15	.22	.43	1.77
MAX				---	3.3	.00	.09	1.2	1.2	1.9	7.4	17
MIN				---	.00	.00	.00	.00	.00	.00	.00	.00
CFSM				---	.46	.000	.004	.07	.18	.27	.52	2.16
IN.				---	.49	.00	.00	.08	.20	.32	.61	2.41
AC-FT				---	22	.00	.2	3.6	9.0	14	27	105

WATER QUALITY RECORDS

PERIOD OF RECORD.--JUNE TO SEPTEMBER 1984

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
JUN, 13	1613	.02	355	29.5					

BEST COPY AVAILABLE

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR

LOCATION.--Lat 18°12'58", long 66°55'34", Hydrologic Unit 21010005, on left bank at Highway 919, 0.5 mi (0.8 km) upstream from Quebrada Don Victor, 1.7 mi (2.7 km) upstream from Río Gurabo and 1.0 mi (1.6 km) south of Juncos.

DRAINAGE AREA.--16.4 sq mi (42.5 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 320 ft (98 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--13 years (1972-84), 49.4 cu ft/s (1.399 cu m/s), 40.90 in/yr (1,039 mm/yr), 35,790 acre-ft/yr (44.1 cu hm/yr); median of yearly mean discharges, 50 cu ft/s (1.42 cu m/s), 36,200 acre-ft/yr (45 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,300 cu ft/s (660 cu m/s) Aug. 31, 1979, gage height, 20.17 ft (6.148 m), from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of slope-area measurement and step-backwater analysis; minimum, 2.0 cu ft/s (0.057 cu m/s) May 11, 1984 gage height, 0.13 ft (0.040 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate discharges (no stages were recorded) of major floods are as follows: Sept. 6, 1960, 37,100 cu ft/s (1,050 cu m/s); Oct. 9, 1970, 18,200 cu ft/s (515 cu m/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,400 cu ft/s (96.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 5	1715	3,890	110	8.13	2.478
June 10	0800	*5,710	162	9.85	3.002

Minimum discharge, 2.0 cu ft/s (0.057 cu m/s) May 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	24	17	17	12	14	8.5	5.8	35	19	20	14
2	21	18	196	15	12	13	8.5	5.7	26	30	72	16
3	24	20	32	14	12	12	8.5	5.7	18	17	23	21
4	20	724	23	16	14	11	8.5	7.1	46	18	41	25
5	19	775	22	14	12	12	8.5	5.8	21	68	25	55
6	18	469	29	13	13	12	8.5	5.3	128	24	19	70
7	19	61	22	13	14	12	9.0	5.6	209	19	17	28
8	20	41	22	13	13	12	8.2	5.8	83	17	15	18
9	40	33	20	14	13	12	7.1	6.2	43	15	16	16
10	20	28	20	15	17	12	7.2	6.3	983	27	15	18
11	17	25	20	14	22	11	7.8	4.2	170	21	14	28
12	26	24	19	13	18	11	7.1	5.0	66	15	14	40
13	20	23	18	27	134	11	7.3	19	241	14	13	334
14	17	22	17	30	35	11	6.6	11	87	24	13	686
15	19	21	18	17	205	11	6.4	7.4	48	25	13	80
16	21	22	18	16	603	11	6.1	7.2	37	15	13	195
17	17	21	18	15	41	11	6.8	6.6	33	14	13	333
18	32	20	18	15	26	11	6.5	6.0	30	13	13	323
19	39	19	17	14	21	10	6.6	5.5	43	12	12	138
20	19	19	16	51	19	10	9.1	5.7	34	14	12	414
21	17	18	16	20	17	10	7.4	6.6	26	23	12	151
22	16	17	18	17	16	10	8.7	6.4	23	21	13	81
23	15	18	18	14	15	10	6.9	15	20	22	12	65
24	14	17	16	13	15	10	6.6	9.0	19	15	12	55
25	14	17	15	13	14	10	6.2	17	19	13	12	55
26	44	16	16	14	14	10	6.0	55	18	12	230	47
27	17	16	19	14	15	9.5	12	16	17	14	300	53
28	15	15	16	14	15	9.0	14	39	17	14	60	50
29	20	16	17	13	13	9.0	6.6	21	32	54	40	43
30	23	17	20	13	---	9.5	6.3	296	20	60	60	51
31	27	---	19	12	---	9.5	---	75	---	22	20	---
TOTAL	677	2576	772	517	1390	334.5	233.5	692.9	2592	691	1164	3503
MEAN	21.8	85.9	24.9	16.7	47.9	10.8	7.78	22.4	86.4	22.3	37.5	117
MAX	44	775	196	51	603	14	14	296	983	68	300	686
MIN	14	15	15	12	12	9.5	6.0	4.2	17	12	12	14
CFSM	1.33	5.24	1.52	1.02	2.92	.66	.47	1.37	5.27	1.36	2.29	7.13
IN.	1.54	5.84	1.75	1.17	3.15	.76	.53	1.57	5.88	1.57	2.64	7.95
AC-FT	1340	5110	1530	1030	2760	663	463	1370	5140	1370	2310	6950

CAL YR 1983 TOTAL 18067.9 MEAN 49.5 MAX 1860 MIN 6.4 CFSM 3.02 IN 40.98 AC-FT 35840
WTR YR 1984 TOTAL 15142.9 MEAN 41.4 MAX 983 MIN 4.2 CFSM 2.52 IN 34.35 AC-FT 30040

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT, 11	1524	17	238	27.5	MAR, 07	1239	12	265	24.5
DEC, 13	1200	18	242	23.0	JUN, 13	1125	34	235	26.0
JAN, 12	0956	13	272	22.0	JUL, 26	1607	13	265	29.0
FEB, 17	1051	41	209	22.5	AUG, 13	1040	13	262	27.0

RIO GRANDE DE LOIZA BASIN

50056900 QUEBRADA MAMEY NEAR GURABO, PR

LOCATION.--Lat 18°14'57", long 65°56'44", Hydrologic Unit 21010005, at left downstream side of bridge on Highway 189, 1.9 mi (3.0 km) southeast of Gurabo plaza, and 2.10 mi (3.4 km) northwest of Juncos plaza.

DRAINAGE AREA.--2.30 sq mi (5.96 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1983 to September 1984.

GAGE.--Water-stage recorder. Altitude of gage is 180 ft (55 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 400 cu ft/s (11.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
June 10	0700	*1,050	29.7	8.11	2.472	Sept. 16	2000	466	13.2	6.64	2.024
Aug. 30	1600	525	14.9	6.83	2.082						

Minimum discharge, 0.24 cu ft/s (0.007 cu m/s) Aug. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	.56	.46	.53	.54	.53	.95	.48	.60	1.3
2			---	.52	.45	.52	.55	.53	.73	.45	1.7	.80
3			---	.51	.46	.49	.56	.53	.52	.46	.64	9.8
4			---	.51	.47	.49	.57	.51	.52	.47	.58	2.6
5			---	.51	.46	.54	.57	.50	.54	2.2	.59	14
6			---	.50	.50	.54	.62	.49	2.9	.70	.50	3.6
7			---	.48	.56	.51	.66	.48	4.3	.47	.48	1.0
8			---	.58	.52	.51	.62	.47	2.1	.44	.47	.73
9			---	.60	5.8	.54	.64	.47	.84	.75	.46	.78
10			---	.63	6.9	.49	.66	.45	73	1.3	.42	.81
11			---	.56	2.3	.49	.67	.43	2.0	.76	.38	.63
12			---	.67	1.2	.50	.67	.47	.98	.55	.38	.70
13			---	1.1	9.5	.50	.63	.92	.83	.48	.39	.75
14			---	.76	1.8	.49	.55	1.0	.69	.70	.38	2.3
15			---	.55	28	.51	.53	.66	.59	.99	.38	.97
16			---	.56	44	.56	.49	.59	.55	.54	.54	27
17			---	.55	1.6	.55	.50	.54	.60	.48	.48	39
18			---	.52	.97	.51	.51	.52	.56	.48	.39	30
19			---	.75	.81	.53	.52	.51	.56	.47	.42	11
20			---	.91	.73	.51	.48	.50	.58	.63	.45	29
21			---	.56	.65	.49	.46	.51	.56	.55	.43	5.7
22			---	.50	.63	.49	.47	.48	.56	.59	.44	2.8
23			---	.51	.62	.55	.47	.55	.52	.54	.41	2.1
24			---	.50	.58	.53	.46	.48	.50	.47	.38	1.8
25			---	.51	.57	.50	.44	.49	.49	.43	.38	1.7
26			---	.50	.56	.51	.48	.52	.47	.42	12	1.5
27			---	.46	.60	.56	1.1	.58	.46	.45	3.8	1.4
28			---	.45	.59	.52	1.1	.68	.46	.43	.42	1.4
29			.53	.44	.53	.51	.58	.60	.61	3.4	.28	1.3
30			.61	.44	---	.51	.50	5.8	.61	1.3	79	1.3
31			.63	.43	---	.53	---	3.7	---	.65	4.1	---
TOTAL			---	17.59	112.76	15.99	17.60	25.49	99.58	23.01	112.27	197.77
MEAN			---	.57	3.89	.52	.59	.82	3.32	.74	3.62	6.59
MAX			---	1.1	44	.56	1.1	5.8	73	3.4	79	39
MIN			---	.43	.44	.49	.44	.43	.46	.42	.28	.63
CFSM			---	.25	1.69	.23	.26	.36	1.44	.32	1.57	2.87
IN.			---	.28	1.82	.26	.28	.41	1.61	.37	1.82	3.20
AC-FT			---	35	224	32	35	51	198	46	223	392

WATER QUALITY RECORDS

PERIOD OF RECORD.--MARCH TO SEPTEMBER 1984

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
MAR, 08	1430	0.5	735	26.0	JUN, 13	1431	0.8	570	31.0
MAY, 21	1420	0.6	705	28.0	AUG, 14	1235	0.4	770	29.0

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO, PR

LOCATION.--Lat 18°15'30", long 65°58'05", Hydrologic Unit 21010005, on left bank, at bridge on Highway 181, 0.3 mi (0.5 km) east of Gurabo, and 4.5 mi (7.6 km) upstream from Río Grande de Loíza.

DRAINAGE AREA.--60.2 sq mi (155.9 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1958 (occasional low-flow measurements only), January to September 1959 (monthly measurements only), October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 136.58 ft (41.630 m) above mean sea level.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--25 years (1960-84), 131 cu ft/s (3.710 cu m/s), 29.55 in/yr (750 mm/yr), 94,910 acre-ft/yr (117 cu hm/yr); median of yearly mean discharges, 127 cu ft/s (3.60 cu m/s), 92,000 acre-ft/yr (113 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,600 cu ft/s (2,133 cu m/s) Sept. 6, 1960, gage height, 27.7 ft (8.44 m), from floodmark, from rating curve extended above 8,000 cu ft/s (227 cu m/s) on basis of slope-area measurement at gage height 21.6 ft (6.58 m), contracted opening, culvert and flow over road measurement at gage height 23.76 ft (7.242 m), and estimate of peak flow based on slope-area measurements of Río Gurabo and Río Valenciano, 7.0 mi (11.3 km) upstream, adjusted for channel storage and flow from intervening area; minimum, 4.5 cu ft/s (0.127 cu m/s) Feb. 21, 25, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate elevation to gage datum of the Aug. 4, 1945 flood, as pointed out by local residents, 26.6 ft (8.11 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 cu ft/s (85.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 4	2045	5,130	145	11.34	3.456
Nov. 5	2145	4,100	116	10.00	3.048
Nov. 6	0800	*6,140	174	12.54	3.822
Nov. 28	1800	3,640	103	9.35	2.850
Feb. 16	0230	4,910	139	11.06	3.371

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
June 10	1000	4,650	132	10.73	3.270
Aug. 26	2330	5,100	144	11.30	3.444
Sept. 16	2230	3,310	93.7	8.86	2.700
Sept. 20	1145	3,070	86.9	8.50	2.591

Minimum discharge, 8.3 cu ft/s (0.235 cu m/s) May 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	64	60	48	27	31	16	14	138	87	51	33
2	60	61	100	37	27	32	16	14	111	72	319	31
3	82	52	76	33	28	30	16	13	81	71	94	49
4	58	1960	54	32	29	28	16	12	100	66	78	61
5	52	1520	52	31	28	29	16	11	73	355	77	140
6	49	2700	70	30	28	29	17	11	262	116	52	181
7	50	297	52	29	35	28	18	11	399	77	43	66
8	95	154	61	33	36	28	19	10	254	74	38	41
9	127	118	58	33	61	29	17	9.6	155	72	36	36
10	76	101	53	33	107	28	16	11	1290	80	34	47
11	54	89	51	32	87	27	15	10	352	70	29	39
12	67	83	48	33	66	25	15	8.6	170	57	26	96
13	58	75	46	52	233	24	14	15	330	48	25	383
14	53	71	46	87	118	25	14	28	168	38	23	972
15	312	68	45	46	231	24	14	15	109	80	22	163
16	129	69	50	38	1610	24	14	14	88	55	30	509
17	95	66	49	67	111	24	12	13	76	45	26	633
18	73	62	46	38	65	25	12	13	69	46	23	669
19	121	59	45	34	50	23	12	12	65	44	22	326
20	92	58	42	109	44	21	13	12	82	46	24	1010
21	142	56	44	51	39	20	14	13	62	43	31	429
22	69	55	45	38	37	20	14	14	54	79	25	186
23	54	53	51	34	35	21	14	17	47	65	25	119
24	47	53	42	34	34	24	13	26	44	51	22	93
25	45	53	39	36	33	20	12	22	44	43	19	80
26	90	50	36	38	32	19	11	80	40	39	622	67
27	52	49	39	31	33	18	21	54	39	40	839	59
28	46	734	38	31	34	17	40	139	39	36	151	59
29	62	178	39	30	32	17	20	64	211	224	98	60
30	112	73	43	29	---	17	15	448	167	269	149	64
31	302	---	50	28	---	17	---	362	---	76	44	---
TOTAL	2807	9081	1570	1235	3330	744	476	1496.2	5119	2564	3097	6701
MEAN	90.5	303	50.6	39.8	115	24.0	15.9	48.3	171	82.7	99.9	223
MAX	312	2700	100	109	1610	32	40	448	1290	355	839	1010
MIN	45	49	36	28	27	17	11	8.6	39	36	19	31
CFSM	1.50	5.03	.84	.66	1.91	.40	.26	.80	2.84	1.37	1.66	3.70
IN.	1.73	5.61	.97	.76	2.06	.46	.29	.92	3.16	1.58	1.91	4.14
AC-FT	5570	18010	3110	2450	6610	1480	944	2970	10150	5090	6140	13290

CAL YR 1983 TOTAL 57421.0 MEAN 157 MAX 8290 MIN 15 CFSM 2.61 IN 35.48 AC-FT 113900
WTR YR 1984 TOTAL 38220.2 MEAN 104 MAX 2700 MIN 8.6 CFSM 1.73 IN 23.62 AC-FT 75810

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO, PR—Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 12	0905	51	321	27.0
NOV, 03	1415	149	315	25.0
DEC, 13	1555	46	357	27.0
JAN, 12	1227	28	399	25.5
MAR, 03	1039	27	365	25.0
MAR, 23	1007	17	376	26.5
APR, 10	1434	15	406	28.0
APR, 24	1359	13	379	29.0
MAY, 19	1218	13	398	29.0
JUN, 18	0921	67	307	27.0
AUG, 14	1045	22	346	29.0

RIO GRANDE DE LOIZA BASIN

50057025 RIO GURABO NEAR GURABO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'56", long 65°59'04", at bridge on Highway 941, 1.2 mi (1.9 km) west-northwest from gaging station 50057000, and 1.0 mi (1.6 km) northwest of Gurabo plaza.

DRAINAGE AREA.--62.8 sq mi (162.7 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
13...	1150	50	329	7.4	23.5	25	4.2	54	<10	4600	280
DEC											
16...	1100	40	356	7.2	26.0	2.9	5.6	69	13	K7900	K2100
MAR , 1984											
13...	1600	22	402	7.7	24.0	9.3	5.4	69	18	K12000	5500
APR											
24...	1330	13	408	7.4	30.0	4.9	5.8	89	<10	500	220
JUN											
26...	1145	32	345	7.4	31.0	8.3	5.4	73	20	K79000	K12000
AUG											
23...	0950	23	377	7.2	29.5	.10	3.0	39	15	31000	3200

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
13...	100	0	23	11	24	1	3.3	107	17	26	.20
DEC											
16...	--	--	--	--	--	--	--	128	--	--	--
MAR , 1984											
13...	--	--	--	--	--	--	--	140	--	--	--
APR											
24...	120	0	26	14	33	1	4.9	131	24	38	.20
JUN											
26...	--	--	--	--	--	--	--	118	--	--	--
AUG											
23...	120	0	26	13	31	1	4.5	123	24	33	.60

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
13...	30	200	27	2	1.2	.11	1.3	.36	.34	.70	2.[illegible]
DEC											
16...	--	--	--	11	1.5	.11	1.6	.36	.54	.90	2.5
MAR , 1984											
13...	--	--	--	14	.91	.09	1.0	1.1	.20	1.3	2.3
APR											
24...	36	250	8.9	13	1.3	.12	1.4	.64	4.2	4.8	6.2
JUN											
26...	--	--	--	19	1.1	.06	1.2	.74	1.6	2.3	3.5
AUG											
23...	34	240	14	24	1.3	.09	1.4	.91	.99	1.9	3.3

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50057025 RIO GURABO NEAR GURABO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
13...	3.9	.52	1	100	1	16	2	<.1	<1	<1
DEC										
16...	11	.45	--	--	--	--	--	--	--	--
MAR , 1984										
13...	10	.96	--	--	--	--	--	--	--	--
APR										
24...	27	.72	2	<100	1	<1	4	<.1	<1	<1
JUN										
26...	15	.67	--	--	--	--	--	--	--	--
AUG										
23...	15	.81	--	--	--	--	--	--	--	--

RIO GRANDE DE LOIZA BASIN

50059000 LAGO LOIZA AT DAMSITE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°19'49", long 66°01'00", at pumphouse at damsite, and 1.9 mi (3.1 km) south of Trujillo Alto Plaza.

DRAINAGE AREA.--208 sq mi (539 sq km).

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY FIELD (MG/L AS CACO3)
OCT , 1983											
14...	1210	124	243	7.0	29.0	2.0	26	45	60	K25	77
DEC											
16...	1415	170	223	7.0	26.0	3.6	44	<10	76	K20	66
MAR , 1984											
12...	1450	124	181	7.0	27.0	1.4	13	13	K32	K18	53
APR											
26...	1210	170	272	6.8	23.5	1.0	13	19	42	K1300	92
JUL											
10...	1310	124	188	6.6	28.0	1.8	23	--	270	100	55
AUG											
21...	1400	170	250	6.6	29.0	.4	5	<10	K40	K20	84

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)
OCT , 1983										
14...	<1	.16	.14	.30	.06	.54	.60	.90	4.0	.19
DEC										
16...	16	.45	.05	.50	.26	.44	.70	1.2	5.3	.16
MAR , 1984										
12...	21	.26	.04	.30	.21	.59	.80	1.1	4.9	.15
APR										
26...	<1	--	.02	<.10	.50	.90	1.4	--	--	.14
JUL										
10...	22	.17	.13	.30	.16	.65	.80	1.1	4.9	.16
AUG										
21...	4	--	<.01	<.10	<.01	--	1.0	--	--	.23

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50059100 RIO GRANDE DE LOIZA BELOW TRUJILLO ALTO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°21'35", long 66°00'15", 100 ft (30 m) downstream of Highway 181 bridge, 0.4 mi (0.6 km) northwest of Trujillo Alto plaza, and 2.2 mi (3.5 km) northeast of Lago Loíza Reservoir.

DRAINAGE AREA.--213 sq mi (552 sq km).

PERIOD OF RECORD.--Water years 1981 to current year.

REMARKS: Flow controlled by Lago Loíza reservoir.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT, 1983											
24...	1430	10	309	7.6	33.0	5.6	6.4	89	12	K1600	360
DEC											
08...	1505	12	326	7.6	27.0	9.7	8.2	103	<10	550	490
MAR, 1984											
15...	1550	5.7	355	8.3	30.0	45	8.3	110	<10	K130	300
MAY											
08...	1455	3.8	377	8.0	30.0	2.4	11.6	153	13	K1600	50
JUL											
03...	1315	8.8	216	7.4	28.0	11	6.7	85	27	K640	100
AUG											
21...	1315	7.7	325	7.8	31.0	5.0	8.0	107	12	2900	K2

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT, 1983											
24...	110	1	26	10	25	1	2.8	105	19	23	.20
DEC											
08...	--	--	--	--	--	--	--	108	--	--	--
MAR, 1984											
15...	--	--	--	--	--	--	--	126	--	--	--
MAY											
08...	130	0	29	13	31	1	3.0	131	22	30	.20
JUL											
03...	--	--	--	--	--	--	--	66	--	--	--
AUG											
21...	110	0	26	11	25	1	2.9	115	23	27	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT, 1983											
24...	26	190	5.3	4	.67	.03	.70	.11	.19	.30	1.0
DEC											
08...	--	--	--	18	.99	.01	1.0	.30	.00	.30	1.3
MAR, 1984											
15...	--	--	--	67	.37	.03	.40	.15	.55	.70	1.1
MAY											
08...	25	230	2.4	9	.17	.03	.20	.07	.73	.80	1.0
JUL											
03...	--	--	--	12	.18	.02	.20	.10	.60	.70	.90
AUG											
21...	25	210	4.3	4	1.7	.01	1.7	.07	.53	.60	2.3

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50059100 RIO GRANDE DE LOIZA BELOW TRUJILLO ALTO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
24...	4.4	.20	1	100	1	7	1	<.1	<1	<1
DEC										
08...	5.6	.20	--	--	--	--	--	--	--	--
MAR , 1984										
15...	4.9	.31	--	--	--	--	--	--	--	--
MAY										
08...	4.4	.46	2	<100	1	<1	1	<.1	<1	<1
JUL										
03...	4.0	.19	--	--	--	--	--	--	--	--
AUG										
21...	10	.33	--	--	--	--	--	--	--	--

RIO GRANDE DE LOIZA BASIN

50061800 RIO CANOVANAS NEAR CAMPO RICO, PR

LOCATION.--Lat 18°19'08", long 65°53'21", Hydrologic Unit 21010005, at center pier on downstream side of bridge, on paved secondary road, 0.4 mi (0.6 km) northeast of junction of Highways 185 and 186, 1.5 mi (2.4 km) south of Campo Rico, and 4.4 mi (7.1 km) south of Loíza.

DRAINAGE AREA.--9.84 sq mi (25.48 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 225 ft (68.6 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--17 years (1968-84), 27.5 cu ft/s (0.779 cu m/s), 37.95 in/yr (964 mm/yr), 19,920 acre-ft/yr (24.6 cu hm/yr); median of yearly mean discharges, 23 cu ft/s (0.65 cu m/s), 16,700 acre-ft/yr (21 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 cu ft/s (425 cu m/s) Sept. 13, 1982, gage height, 13.1 ft (3.993 m), from floodmarks, from rating curve extended above 350 cu ft/s (9.91 cu m/s) on basis of slope-area measurements and step-backwater analysis made in 1981; minimum daily, 0.80 cu ft/s (0.023 cu m/s) July 24, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 cu ft/s (70.8 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 6	0500	4,820	136	8.33	2.539	Aug. 26	1845	2,510	71.1	6.36	1.938
Dec. 2	0800	*5,260	149	8.66	2.640	Sept. 20	0815	2,550	72.2	6.40	1.951

Minimum discharge, 2.8 cu ft/s (0.079 cu m/s) July 28, 29, Aug. 15, 19, 20, 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	21	10	15	8.0	8.9	4.8	3.9	11	7.3	6.5	7.7
2	11	15	395	12	7.8	9.3	4.8	3.8	8.5	5.8	50	7.1
3	10	13	32	12	7.8	8.4	4.7	3.8	5.9	7.0	11	16
4	9.9	271	22	12	8.1	7.9	4.4	3.7	4.5	6.0	8.0	13
5	9.4	78	20	12	7.9	7.9	4.5	3.8	4.2	45	7.5	12
6	9.2	570	59	11	7.5	8.1	4.2	3.9	4.9	12	5.1	21
7	9.0	54	26	11	8.1	7.8	4.7	4.2	17	7.1	4.3	9.7
8	26	35	20	19	8.8	7.9	4.7	3.7	24	5.5	3.8	7.6
9	26	28	19	15	35	8.4	4.3	3.9	11	4.9	3.4	6.8
10	16	25	18	14	47	7.8	4.1	4.9	19	4.5	3.2	8.8
11	11	22	20	13	39	7.2	4.1	4.1	16	4.7	3.2	10
12	9.2	19	19	15	22	7.3	4.6	3.5	10	4.7	3.1	14
13	12	17	17	142	33	7.4	4.3	4.8	8.4	4.6	3.2	13
14	9.7	18	16	35	26	7.1	3.9	8.0	7.2	6.3	3.2	24
15	14	17	16	18	19	6.8	4.0	6.4	5.8	6.9	2.9	13
16	31	15	16	13	61	8.3	3.7	4.5	5.1	4.8	3.2	57
17	28	14	16	12	18	7.4	3.5	3.8	5.5	4.0	3.2	32
18	24	14	17	16	14	7.9	3.6	3.6	5.1	3.9	3.0	38
19	27	16	16	14	12	6.9	3.5	3.4	7.0	3.8	3.0	26
20	14	13	14	15	12	6.6	3.5	3.6	12	3.7	2.8	321
21	19	13	13	12	10	6.2	3.5	3.5	6.7	3.4	3.2	42
22	15	12	15	11	9.9	5.9	3.5	4.2	5.2	3.3	4.1	22
23	10	12	14	12	9.8	6.0	3.5	3.6	4.6	3.2	3.4	15
24	9.5	12	13	12	9.6	5.8	3.6	3.6	4.1	3.5	3.0	13
25	9.0	13	12	14	9.3	5.7	3.3	3.2	4.2	3.4	3.3	12
26	8.8	11	12	13	9.3	5.5	3.4	4.3	3.8	3.9	289	11
27	8.6	11	12	10	9.7	4.8	7.2	8.0	3.8	3.2	76	9.5
28	8.3	11	13	9.9	10	4.8	17	7.2	3.6	3.0	17	9.5
29	11	11	17	8.8	9.0	4.7	6.5	8.3	13	29	11	8.9
30	129	12	15	8.7	---	5.0	4.3	44	17	30	8.9	9.3
31	96	---	24	8.4	---	4.6	---	44	---	7.8	8.2	---
TOTAL	647.6	1393	948	545.8	488.6	214.3	139.7	219.2	258.1	246.2	560.7	829.9
MEAN	20.9	46.4	30.6	17.6	16.8	6.91	4.66	7.07	8.60	7.94	18.1	27.7
MAX	129	570	395	142	61	9.3	17	44	24	45	289	321
MIN	8.3	11	10	8.4	7.5	4.6	3.3	3.2	3.6	3.0	2.8	6.8
CFSM	2.12	4.72	3.11	1.79	1.71	.70	.47	.72	.87	.81	1.84	2.82
IN.	2.45	5.27	3.58	2.06	1.85	.81	.53	.83	.98	.93	2.12	3.14
AC-FT	1280	2760	1880	1080	969	425	277	435	512	488	1110	1650

CAL YR 1983 TOTAL 8806.0 MEAN 24.1 MAX 772 MIN 2.8 CFSM 2.45 IN 33.29 AC-FT 17470
WTR YR 1984 TOTAL 6491.1 MEAN 17.7 MAX 570 MIN 2.8 CFSM 1.80 IN 24.56 AC-FT 12880

RIO GRANDE DE LOIZA BASIN

50061800 RIO CANOVANAS NEAR CAMPO RICO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT., 11	1541	10	170	26.5
NOV., 17	1344	14	211	27.0
DEC., 15	1330	16	207	25.0
JAN., 17	1035	13	233	24.5
FEB., 09	1029	12	240	22.0
MAR., 19	0937	6.3	246	21.0
APR., 11	1537	4.0	260	31.0
MAY, 22	1659	3.7	266	29.0
JUL., 19	1526	3.9	227	32.5
AUG., 06	1632	5.1	219	30.0
SEP., 12	1432	12	170	26.5

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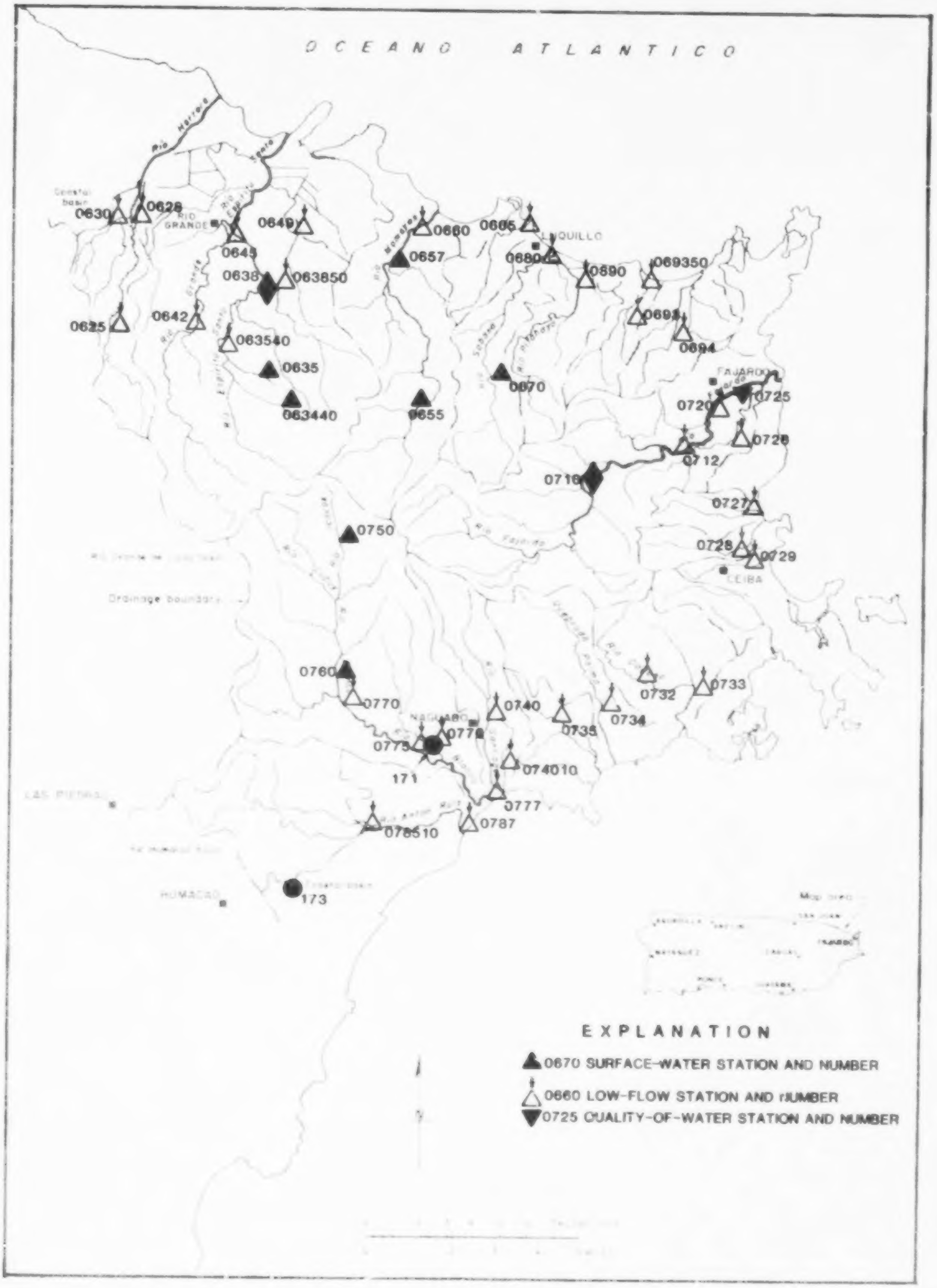
OCEANO ATLANTICO
Río Herrera
Coastal basin
0630
0628
RIO GRANDE
Río Espíritu Santo
0649
0645
0638
063850
0625
0642
Río Grande
063540
0635
063440
Río Mameyes
0660
0657
0655
0665
LUQUILLO
0680
0690
069350
0693
0694
Río Sabana
0670
FAJARDO
0720
0725
0726
0712
0710
0727
0728
0729
CEIBA
Río Fajardo
0750
Drainage boundary
0760
0770
NAGUABO
0779
0775
171
0740
0735
0734
0732
0733
074010
0777
0787
078510
Río Antón Ruíz
LAS PIEDRAS
HUMACAO
173
Map area
SAN JUAN
FAJARDO
EXPLANATION
0670 SURFACE-WATER STATION AND NUMBER
0660 LOW-FLOW STATION AND NUMBER
0725 QUALITY-OF-WATER STATION AND NUMBER
N

Figure 18.--Northeastern river basins--Río Herrera to Río Antón Ruíz basins.

50063440 QUEBRADA SONADORA NEAR EL VERDE, PR

LOCATION.--Lat 18°19'24", long 65°49'03", Hydrologic Unit 21010005, in Caribbean National Forest, at El Yunque, 0.55 mi (0.88 km) upstream from Río Espíritu Santo, 0.23 mi (0.42 km) upstream from Highway 186, and about 1.2 mi (1.9 km) south of El Verde.

DRAINAGE AREA.--1.01 sq mi (2.62 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1983 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,230 ft (375 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,410 cu ft/s (39.9 cu m/s) Dec. 2, 1983, gage height, 8.60 ft (2.621 m) from rating curve extended above 20 cu ft/s (0.57 cu m/s) on basis of step-backwater analysis; minimum, 0.35 cu ft/s (0.010 cu m/s) Apr. 27, 1984.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 500 cu ft/s (14.2 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Dec. 2	0715	*1,410	39.9	8.60	2.621

Minimum discharge, 0.35 cu ft/s (0.010 cu m/s) Apr. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	2.9	2.3	6.3	2.0	2.4	1.1	.68	3.9	4.1	12	2.2
2	2.5	2.6	55	4.2	1.7	2.2	.90	.55	2.8	3.0	24	1.6
3	1.6	5.3	3.5	3.7	1.9	1.5	.95	5.7	2.1	6.9	6.0	2.3
4	1.3	44	2.2	3.3	8.6	1.3	.92	8.0	1.6	56	8.8	1.8
5	1.2	10	3.1	3.0	3.8	1.2	.76	1.5	1.7	29	9.7	5.6
6	1.0	46	24	2.9	4.7	1.3	.56	1.7	30	4.5	5.0	4.6
7	2.6	5.2	3.6	2.4	8.7	1.1	.69	3.1	25	3.3	4.3	1.9
8	4.5	3.8	2.4	2.3	2.9	1.2	.58	1.3	4.3	2.7	4.0	1.5
9	7.9	3.3	2.1	5.1	20	4.2	.57	2.7	11	2.4	3.9	1.6
10	3.0	3.0	2.3	7.9	38	1.6	.59	5.1	16	2.4	3.6	2.3
11	1.6	2.8	13	5.9	14	.96	.90	2.2	6.4	4.2	3.4	21
12	1.5	2.6	4.6	14	11	1.6	.67	1.1	6.2	2.8	3.3	9.8
13	5.4	2.5	2.2	31	26	4.2	.48	8.5	8.4	1.9	3.4	14
14	3.3	2.4	1.6	8.2	8.1	7.0	.49	4.2	4.4	6.4	3.0	13
15	4.1	2.2	5.6	3.5	28	1.8	.46	7.6	2.8	3.4	2.6	3.6
16	2.3	2.1	8.8	7.5	22	2.0	.45	2.1	6.2	2.1	2.3	23
17	33	2.0	7.6	6.3	6.0	5.2	.53	3.0	11	1.7	2.2	10
18	18	1.9	14	6.5	4.8	2.5	.50	2.0	3.1	1.7	1.9	8.3
19	5.3	2.2	7.9	3.0	4.4	1.2	.48	8.6	18	1.3	1.8	4.9
20	4.9	1.9	4.7	4.2	5.6	1.2	.61	8.6	5.2	1.2	1.9	22
21	3.5	1.8	3.1	2.2	3.5	.78	2.0	2.3	3.3	1.6	1.9	7.0
22	2.7	1.7	9.0	3.1	2.9	1.1	1.2	3.3	2.6	1.7	2.3	3.8
23	2.3	1.5	6.4	8.8	2.5	4.5	.73	3.9	2.1	3.0	1.9	6.1
24	2.0	1.9	3.9	4.5	2.2	4.5	.69	1.5	1.9	4.9	1.7	2.7
25	1.9	2.9	2.6	9.9	2.1	3.4	.42	1.7	1.7	2.0	8.3	2.3
26	1.8	1.6	2.2	6.5	2.1	2.9	.39	38	1.6	3.7	50	2.1
27	1.7	1.7	5.8	4.0	2.8	2.4	1.6	36	1.4	1.7	9.6	2.1
28	1.6	1.6	8.3	4.5	2.6	2.0	8.9	15	1.5	3.4	5.0	2.6
29	5.9	1.6	15	3.0	1.8	1.7	2.5	39	3.5	16	2.6	2.6
30	28	3.9	9.3	2.9	---	1.6	1.1	67	7.5	8.3	1.9	7.7
31	12	---	28	2.3	---	1.3	---	6.8	---	3.5	2.0	---
TOTAL	179.4	163.7	264.1	182.9	244.7	71.82	32.90	292.73	197.2	190.8	194.3	194.0
MEAN	5.79	5.62	8.52	5.90	8.44	2.32	1.09	9.44	6.57	6.15	6.27	6.47
MAX	33	46	55	31	38	7.0	8.9	67	30	56	50	23
MIN	1.0	1.5	1.6	2.2	1.7	.78	.39	.55	1.4	1.2	1.7	1.5
CFSM	5.73	5.56	8.44	5.84	8.36	2.30	1.08	9.35	6.51	6.09	6.21	6.41
IN.	6.60	6.21	9.72	6.73	9.00	2.64	1.21	10.77	7.26	7.02	7.15	7.14
AC-FT	356	335	524	363	485	142	65	581	391	378	385	385

WTR YR 1984 TOTAL 2213.45 MEAN 6.05 MAX 67 MIN .39 CFSM 5.99 IN 81.44 AC-FT 4390

WATER QUALITY RECORDS

PERIOD OF RECORD.--APRIL 1983 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT, 05	1048	1.2	51	22.0	MAR, 19	1500	1.2	53	19.5
NOV, 22	1150	1.7	59	21.5	APR, 12	1233	.64	60	22.0
DEC, 13	1319	2.3	28	20.0	MAY, 22	1137	1.7	51	22.0
JAN, 17	1305	6.2	45	20.0	JUN, 05	0955	1.4	47	25.5
FEB, 23	1207	2.6	51	19.5	AUG, 02	1302	16	47	22.5

RIO ESPIRITU SANTO BASIN

50063500 QUEBRADA TORONJA AT EL VERDE, PR

LOCATION.--Lat 18°19'43", long 65°49'14", Hydrologic Unit 21010005, in Caribbean National Forest, at downstream side of culvert on Highway 186, 0.22 mi (0.35 km) upstream from Río Espíritu Santo, and about 0.9 mi (1.4 km) south of El Verde.

DRAINAGE AREA.--0.064 sq mi (0.166 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1983 to current year.

GAGE.--Water-stage recorder and concrete broad-V-notch crested weir. Altitude of gage is 876 ft (267 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18.0 cu ft/s (0.51 cu m/s), July 5, 1983, gage height, 1.71 ft (0.521 m), from rating curve extended above 1.0 cu ft/s (0.03 m) on basis of step-backwater analysis; minimum, no flow for part of each day Apr. 10, 17, 1983.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 50 cu ft/s (1.42 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Dec. 2	0700	*10.0	0.28	1.61	0.491

Minimum discharge, 0.02 cu ft/s (0.001 cu m/s), Apr. 8-12, 18, 19, May 5, 7, 8, 11, 12, 22-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.19	.16	.07	.20	.11	.12	.03	.03	.06	.08	.23	.03
2	.10	.12	1.3	.19	.11	.10	.03	.03	.05	.07	.45	.03
3	.08	.11	.19	.17	.10	.09	.03	.05	.04	.10	.07	.04
4	.06	1.3	.15	.15	.21	.09	.03	.06	.04	.99	.13	.03
5	.05	.39	.19	.15	.12	.09	.03	.03	.04	1.0	.12	.05
6	.05	1.2	1.4	.15	.11	.08	.03	.05	.56	.18	.06	.04
7	.05	.31	.26	.15	.16	.09	.03	.03	.69	.13	.05	.03
8	.07	.24	.19	.16	.10	.10	.03	.02	.12	.11	.04	.03
9	.10	.19	.17	.18	.77	.10	.03	.03	.25	.10	.04	.03
10	.05	.16	.21	.17	1.1	.09	.03	.05	.98	.09	.04	.03
11	.04	.15	.40	.15	.65	.09	.03	.03	.21	.11	.04	.53
12	.05	.13	.26	.30	.59	.09	.03	.03	.16	.08	.04	.09
13	.14	.12	.19	1.0	1.2	.09	.03	.03	.16	.07	.04	.25
14	.07	.11	.18	.35	.48	.09	.04	.04	.10	.11	.03	.19
15	.13	.10	.20	.20	.84	.05	.04	.05	.08	.08	.03	.07
16	.08	.09	.21	.21	.88	.06	.04	.03	.17	.07	.03	.28
17	1.3	.09	.18	.21	.34	.06	.04	.03	.23	.07	.03	.19
18	.45	.09	.27	.19	.26	.05	.03	.03	.10	.05	.03	.12
19	.20	.08	.25	.18	.23	.05	.03	.06	.20	.04	.03	.08
20	.14	.07	.18	.18	.23	.06	.04	.09	.14	.06	.03	.59
21	.11	.07	.16	.20	.20	.05	.06	.05	.10	.05	.03	.14
22	.09	.07	.24	.28	.18	.06	.05	.05	.08	.04	.04	.08
23	.09	.07	.18	.39	.18	.06	.03	.04	.08	.04	.03	.07
24	.08	.08	.15	.24	.18	.05	.03	.02	.07	.05	.02	.06
25	.07	.06	.15	.21	.16	.05	.03	.03	.07	.04	.09	.05
26	.07	.07	.13	.19	.16	.05	.04	.19	.07	.07	.85	.05
27	.05	.07	.27	.14	.17	.05	.05	.49	.07	.04	.22	.05
28	.06	.07	.22	.13	.15	.05	.04	.19	.07	.04	.09	.04
29	.45	.07	.27	.12	.14	.05	.03	.71	.09	.17	.04	.05
30	.74	.10	.23	.12	---	.04	.03	1.8	.13	.18	.04	.08
31	.51	---	.65	.11	---	.04	---	.14	---	.05	.03	---
TOTAL	5.73	5.94	9.08	6.77	10.11	2.19	1.04	4.51	5.21	4.36	3.04	3.40
MEAN	.18	.20	.29	.22	.35	.071	.035	.15	.17	.14	.098	.11
MAX	1.3	1.3	1.4	1.0	1.2	.12	.06	1.8	.98	1.0	.85	.59
MIN	.04	.06	.07	.11	.10	.04	.03	.02	.04	.04	.02	.03
CFSM	3.00	3.33	4.53	3.67	5.83	1.18	.58	2.50	2.83	2.33	1.63	1.82
IN.	3.28	3.40	5.20	3.87	5.79	1.25	.60	2.58	2.98	2.48	1.74	1.95
AC-FT	11	12	18	13	20	4.3	2.1	8.9	10	8.6	6.0	6.7

WTR YR 1984 TOTAL 61.36 MEAN .17 MAX 1.8 MIN .02 CFSM 2.83 IN 35.12 AC-FT 122

RIO ESPIRITU SANTO BASIN

50063500 QUEBRADA TORONJA AT EL VERDE, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--APRIL 1983 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT. 07	1030	.03	109	23.5
NOV. 22	1600	.07	105	23.0
DEC. 13	1431	.17	96	21.0
JAN. 17	1215	.17	102	21.0
FEB. 23	1315	.17	102	21.0
MAR. 19	0850	.05	123	20.0
APR. 12	1326	.02	121	22.5
MAY. 22	1256	.03	122	22.5
JUN. 05	1112	.04	107	26.0
AUG. 02	1502	.20	96	23.5
SEP. 12	1030	.13	94	22.5

RIO ESPIRITU SANTO BASIN

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR

LOCATION.--Lat 18°21'37", long 65°48'49", Hydrologic Unit 21010005, at left abutment, on downstream side of bridge on Highway 966, 0.1 mi (0.2 km) upstream from Quebrada Jiménez, and 1.9 mi (3.1 km) southeast of Río Grande.

DRAINAGE AREA.--8.62 sq mi (22.33 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to April 1963 (annual low flow and occasional measurements only), August 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 40 ft (12 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--18 years (1967-84), 56.6 cu ft/s (1.603 cu m/s), 89.17 in/yr (2,265 mm/yr), 41,010 acre-ft/yr (50.6 cu hm/yr); median of yearly mean discharges, 52 cu ft/s (1.47 cu m/s), 37,700 acre-ft/yr (46 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 cu ft/s (351 cu m/s) Dec. 2, 1983, gage height, 12.07 ft (3.679 m), from rating curve extended above 600 cu ft/s (17.0 cu m/s) on basis of step-backwater analysis; minimum, 4.0 cu ft/s (0.113 cu m/s) July 3-5, 1975, Apr. 14, 15, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 cu ft/s (85.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 6	0515	3,080	87.2	7.27	2.216
Dec. 2	0745	*12,400	351	12.07	3.679

Minimum discharge, 4.0 cu ft/s (0.111 cu m/s) Apr. 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	31	18	33	20	22	7.0	5.4	27	40	39	20
2	23	23	688	25	19	22	6.3	5.0	20	26	223	18
3	17	25	39	22	18	18	6.0	5.4	16	37	30	19
4	16	476	26	20	54	17	5.6	35	13	414	84	17
5	15	100	27	19	29	17	5.4	8.1	13	317	60	48
6	17	455	247	18	35	17	5.5	7.8	131	43	23	48
7	38	54	42	17	52	16	5.3	11	313	27	18	18
8	40	38	26	17	34	16	5.1	8.0	36	22	16	15
9	36	32	23	24	202	23	5.3	11	89	20	15	15
10	19	29	26	52	318	18	5.1	21	190	19	14	19
11	16	26	72	26	143	14	5.4	11	63	25	13	163
12	15	24	42	133	89	13	5.7	7.0	39	21	12	86
13	43	22	23	307	303	19	5.0	48	87	17	12	108
14	29	21	20	99	82	46	4.5	18	33	47	11	125
15	28	20	34	41	204	16	4.4	24	22	30	11	30
16	23	20	52	62	192	15	4.7	10	35	18	11	172
17	296	19	55	76	49	28	4.9	13	78	16	11	99
18	180	18	77	82	37	13	4.8	12	24	17	11	62
19	61	21	55	37	33	8.5	4.8	28	117	15	11	36
20	44	18	29	56	36	7.7	5.2	57	46	14	11	251
21	35	17	23	34	27	7.3	5.8	13	23	14	11	58
22	24	16	69	37	24	7.0	6.3	15	19	18	11	28
23	21	16	47	73	22	11	5.4	20	16	21	11	22
24	22	15	26	46	21	8.1	5.3	15	16	31	11	20
25	20	23	21	74	20	8.2	4.7	11	16	18	60	18
26	17	15	19	65	20	8.8	4.8	196	15	23	260	17
27	16	15	28	32	25	8.6	4.7	246	15	16	100	17
28	15	14	54	28	26	8.5	29	110	14	18	34	20
29	202	14	88	24	20	8.0	9.9	294	29	131	24	16
30	307	22	62	22	---	7.8	6.1	606	51	77	19	43
31	180	---	193	21	---	7.7	---	53	---	24	21	---
TOTAL	1881	1639	2251	1627	2154	457.2	188.0	1924.7	1606	1576	1198	1628
MEAN	60.7	54.6	72.6	52.5	74.3	14.7	6.27	62.1	53.5	50.8	38.6	54.3
MAX	307	476	688	307	318	46	29	606	313	414	260	251
MIN	15	14	18	17	18	7.0	4.4	5.0	13	14	11	15
CFSM	7.04	6.33	8.42	6.09	8.62	1.71	.73	7.20	6.21	5.89	4.48	6.30
IN.	8.12	7.07	9.71	7.02	9.29	1.97	.81	8.31	6.93	6.80	5.17	7.02
AC-FT	3730	3250	4460	3230	4270	907	373	3820	3190	3130	2380	3230

CAL YR 1983 TOTAL 19952.1 MEAN 54.7 MAX 1060 MIN 6.7 CFSM 6.35 IN 86.09 AC-FT 39570
WTR YR 1984 TOTAL 18129.9 MEAN 49.5 MAX 688 MIN 4.4 CFSM 5.74 IN 78.23 AC-FT 35960

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RIO ESPIRITU SANTO BASIN

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958, 1961-66, 1968 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT , 1983										
11...	1450	16	101	7.8	27.5	1.1	8.2	104	32	K1400
DEC										
08...	1205	25	98	7.6	23.0	2.5	9.2	107	<10	200
MAR , 1984										
15...	1235	15	100	8.0	24.5	1.0	9.5	114	18	K890
MAY										
02...	1155	5.0	122	7.7	26.0	<1.0	10.8	132	<10	300
JUN										
28...	1110	16	99	7.5	27.0	1.1	8.7	109	15	540
AUG										
20...	1530	11	114	7.7	29.0	.40	7.7	99	<10	210

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
OCT , 1983										
11...	470	31	0	6.6	3.6	7.2	.6	.40	32	3.6
DEC										
08...	2500	--	--	--	--	--	--	--	31	--
MAR , 1984										
15...	380	--	--	--	--	--	--	--	31	--
MAY										
02...	540	41	0	8.9	4.6	8.7	.6	.50	43	3.0
JUN										
28...	230	--	--	--	--	--	--	--	33	--
AUG										
20...	110	38	0	8.3	4.3	8.3	.6	.40	41	3.2

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT , 1983										
11...	10	<.10	18	71	3.1	3	<.01	<.10	<.01	--
DEC										
08...	--	--	--	--	--	21	<.01	<.10	.07	--
MAR , 1984										
15...	--	--	--	--	--	3	<.01	<.10	<.01	--
MAY										
02...	11	<.10	21	83	1.1	1	<.01	<.10	.04	1.8
JUN										
28...	--	--	--	--	--	2	<.01	<.10	.02	--
AUG										
20...	11	.50	22	93	2.5	1	<.01	<.10	<.01	--

K = non-ideal count

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RIO ESPIRITU SANTO BASIN

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
11...	.20	.03	2	<100	2	5	1	<.1	<1	<1
DEC										
08...	<.10	.04	--	--	--	--	--	--	--	--
MAR , 1984										
15...	<.10	<.01	--	--	--	--	--	--	--	--
MAY										
02...	1.8	.01	2	<100	1	<1	5	.1	<1	<1
JUN										
28...	<.10	<.01	--	--	--	--	--	--	--	--
AUG										
20...	.20	.02	--	--	--	--	--	--	--	--

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RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA, PR

LOCATION.--Lat 18°19'46", long 65°45'04", on left bank, at bridge on Highway 988, 1.4 mi (2.3 km) west of Sabana, 2.0 mi (3.2 km) downstream from Río de la Mina, and 3.2 mi (5.1 km) southeast of Mameyes.

DRAINAGE AREA.--6.88 sq mi (17.8 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1967 to December 1973. June 1983 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 275 ft (83.8 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--7 years (1968-73, 1984), 57.7 cu ft/s (1.634 cu m/s), 113.89 in/yr (2,893 mm/yr), 41,800 acre-ft/yr (51.5 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,800 cu ft/s (561 cu m/s) Sept. 4, 1973, gage height, 13.02 ft (3.968 m), from rating curve extended above 1,800 cu ft/s (51.0 cu m/s) on basis of slope-area measurement of peak flow; minimum, 5.1 cu ft/s (0.144 cu m/s) Apr. 8, 9, 1970.

EXTREMES FOR CURRENT YEAR. -Peak discharges above base of 4,000 cu ft/s (113 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Dec. 2	0715	*8,030	228	9.51	2.899
May 30	0330	6,020	170	8.65	2.637
July 4	2015	4,500	128	7.86	2.396

Minimum discharge, 9.6 cu ft/s (0.272 cu m/s) Apr. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	49	24	36	25	34	12	14	50	72	47	22
2	41	39	376	26	23	31	12	14	31	53	110	22
3	39	51	28	23	25	28	12	29	28	53	30	21
4	36	217	21	21	56	24	12	39	28	319	40	21
5	35	73	20	20	28	24	12	17	42	165	41	32
6	33	181	77	19	36	24	15	19	296	66	27	29
7	58	49	26	18	63	23	14	22	210	57	23	21
8	74	40	22	17	26	24	30	16	84	50	21	19
9	64	35	19	30	81	32	12	25	105	45	22	23
10	43	32	23	45	244	23	12	39	106	45	20	25
11	37	30	68	25	99	22	18	20	95	44	18	42
12	38	28	31	64	67	24	13	20	84	40	17	58
13	62	27	20	152	113	31	11	47	97	35	17	44
14	53	25	19	78	75	75	11	28	72	38	14	69
15	49	24	38	47	165	20	11	27	58	28	13	30
16	41	25	37	69	112	22	12	28	67	24	14	112
17	62	23	54	79	53	47	11	28	103	21	13	54
18	147	24	71	46	43	21	11	42	61	23	12	56
19	60	26	39	38	38	16	12	70	89	20	12	38
20	101	21	29	44	40	17	13	59	64	22	12	125
21	55	21	23	31	30	21	16	23	62	22	12	51
22	66	21	60	38	31	22	13	23	59	23	14	37
23	47	19	37	56	31	27	13	32	53	27	12	31
24	44	23	26	45	30	18	11	29	51	30	11	29
25	39	30	21	72	28	19	17	42	51	25	50	26
26	36	22	21	44	29	18	15	123	53	29	133	24
27	36	22	32	30	30	14	22	118	58	25	45	25
28	34	22	54	29	30	13	34	78	50	25	25	30
29	35	21	80	26	31	12	14	188	49	75	22	32
30	126	26	43	26	---	12	15	421	51	48	20	60
31	72	---	123	24	---	12	---	69	---	28	21	---
TOTAL	1734	1246	1562	1318	1682	750	436	1749	2311	1577	888	1208
MEAN	55.9	41.5	50.4	42.5	58.0	24.2	14.5	56.4	77.0	50.9	28.6	40.3
MAX	147	217	376	152	244	75	34	421	296	319	133	125
MIN	33	19	19	17	23	12	11	14	28	20	11	19
CFSM	8.13	6.03	7.33	6.18	8.43	3.52	2.11	8.20	11.2	7.40	4.16	5.86
IN.	9.37	6.74	8.44	7.13	9.09	4.05	2.36	9.46	12.49	8.53	4.80	6.53
AC-FT	3440	2470	3100	2610	3340	1490	865	3470	4580	3130	1760	2400

WTR YR 1984 TOTAL 16461 MEAN 45.0 MAX 421 MIN 11 CFSM 6.54 IN 88.99 AC-FT 32650

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--JUNE 1983 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 07	1000	138	96	24.5
NOV, 18	1132	22	103	23.0
DEC, 14	1140	19	95	22.0
JAN, 13	1145	63	69	23.0
FEB, 22	1136	31	99	20.5
MAR, 20	1030	18	106	21.0
MAR, 29	1460	12	116	26.0
APR, 13	1133	11	149	24.5
MAY, 24	1349	27	87	23.5
JUN, 06	1108	96	55	26.0
JUL, 20	1159	22	101	27.0
AUG, 05	1117	26	108	24.5
SEP, 13	1025	38	860	23.5

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RIO MAMEYES BASIN

50065700 RIO MAMEYES AT HIGHWAY 191 AT MAMEYES, PR

LOCATION.--Lat 18°22'03", long 65°46'14", Hydrologic Unit 21010005, on left bank, 0.2 mi (0.3 km) upstream from Quebrada Anón, 0.3 mi (0.5 km) downstream from Quebrada Tabonuco, and 0.3 mi (0.5 km) south of Mameyes.

DRAINAGE AREA.--11.8 sq mi (30.6 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 22 ft (6.7 m), from topographic map. Prior to Jan. 1, 1974 at datum 4.88 ft (1.487 m) higher and Jan. 1, 1974 to Mar. 25, 1976 at datum 4.00 ft (1.219 m) higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--18 years (1967-84), 72.6 cu ft/s (2.056 cu m/s), 83.55 in/yr (2,122 mm/yr), 52,600 acre-ft/yr (64.8 cu hm/yr); median of yearly mean discharges, 71 cu ft/s (2.01 cu m/s), 51,400 acre-ft/yr (63 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,200 cu ft/s (742 cu m/s), Oct. 24, 1974, gage height, 18.79 ft (5.727 m), present datum, from rating curve extended above 200 cu ft/s (5.66 cu m/s) on basis of slope-area measurement of peak flow; minimum, 5.0 cu ft/s (0.142 cu m/s) Apr. 28, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,300 cu ft/s (150 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Dec. 2	0745	*7,780	220	14.39	4.386

Minimum discharge, 8.1 cu ft/s (0.229 cu m/s) Apr. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	29	28	56	32	28	13	10	105	39	59	27
2	29	23	581	38	32	26	14	10	46	21	327	22
3	21	30	51	34	31	23	14	11	35	28	57	22
4	20	530	34	30	99	23	14	82	58	595	84	25
5	19	151	31	28	43	25	14	15	68	317	95	48
6	21	370	143	27	40	26	15	17	457	78	41	58
7	48	90	44	26	86	26	14	21	526	57	32	24
8	51	61	35	25	33	28	13	16	136	46	28	23
9	46	49	32	36	120	43	14	25	145	40	28	26
10	24	42	33	69	467	27	14	52	298	42	25	33
11	18	38	99	34	230	23	21	25	117	41	23	64
12	18	34	51	87	94	23	15	20	88	39	25	92
13	55	32	30	271	294	26	11	70	136	31	31	58
14	40	29	27	96	136	51	11	32	66	44	25	142
15	30	28	53	58	296	24	11	28	42	39	25	35
16	25	28	57	85	224	27	11	30	74	31	28	196
17	100	27	73	97	70	58	11	33	170	27	23	35
18	179	25	95	78	52	25	10	56	48	36	21	67
19	54	33	59	46	45	19	9.6	70	95	27	20	36
20	142	27	42	66	46	20	9.0	132	49	28	19	439
21	47	25	33	41	37	21	9.4	26	36	32	20	70
22	56	24	108	48	33	27	9.8	28	28	37	23	31
23	34	21	63	74	31	37	11	38	25	63	20	26
24	26	21	38	46	29	23	11	33	22	47	19	25
25	22	35	31	99	28	21	17	53	21	33	77	22
26	20	24	29	72	29	19	17	244	24	31	341	21
27	20	25	39	44	28	17	12	271	30	25	134	22
28	25	25	84	39	27	16	71	192	24	27	44	22
29	74	23	119	35	25	14	15	247	31	138	30	28
30	187	30	63	34	---	13	11	722	36	125	24	98
31	128	---	216	33	---	13	---	167	---	40	28	---
TOTAL	1664	1929	2421	1852	2737	792	442.8	2776	2944	2184	1776	1887
MEAN	53.7	64.3	78.1	59.7	94.4	25.5	14.8	89.5	98.1	70.5	57.3	62.9
MAX	187	530	581	271	467	58	71	722	526	595	341	439
MIN	18	21	27	25	25	13	9.0	10	21	21	19	21
CFSM	4.55	5.45	6.62	5.06	8.00	2.16	1.25	7.59	8.31	5.98	4.86	5.33
IN.	5.25	6.08	7.63	5.84	8.63	2.50	1.40	8.75	9.28	6.89	5.60	5.95
AC-FT	3300	3830	4800	3670	5430	1570	878	5510	5840	4330	3520	3740

CAL YR 1983 TOTAL 26032.5 MEAN 71.3 MAX 1160 MIN 8.0 CFSM 6.04 IN 82.06 AC-FT 51640
WTR YR 1984 TOTAL 23404.8 MEAN 63.9 MAX 722 MIN 9.0 CFSM 5.42 IN 73.78 AC-FT 46420

RIO MAMEYES BASIN

50065700 RIO MAMEYES AT HIGHWAY 191 AT MAMEYES, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1931 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 05	1127	22	144	27.0	APR, 12	0937	16	147	24.5
NOV, 21	1510	26	162	28.0	MAY, 23	1640	31	115	27.0
DEC, 13	1025	37	126	23.5	JUN, 06	1346	105	70	26.5
JAN, 19	0915	45	133	23.0	JUL, 19	1156	28	135	29.0
FEB, 07	1313	47	103	23.0	AUG, 06	1351	39	144	30.0
MAR, 20	1233	22	163	23.0	SEP, 13	1352	46	120	26.0

RIO SABANA BASIN

50067000 RIO SABANA AT SABANA, PR

LOCATION.--Lat 18°19'52", long 65°43'52", Hydrologic Unit 21010005, on right bank along Highway 988, 0.3 mi (0.5 km) north of junction of Highways 988 and 983 in Sabana, and 3.3 mi (5.3 km) south of Luquillo.

DRAINAGE AREA.--3.96 sq mi (10.26 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 260 ft (80 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--5 years (1980-84), 17.5 cu ft/s (0.496 cu m/s), 60.01 in/yr (1,524 mm/yr), 12,680 acre-ft/yr (15.6 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,010 cu ft/s (255 cu m/s) Apr. 21, 1983, gage height, 19.35 ft (5.898 m), from floodmark, from rating curve extended above 200 cu ft/s (5.66 cu m/s) on basis of step-backwater analysis and slope-area measurement; minimum discharge, 0.86 cu ft/s (0.024 cu m/s) Apr. 17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 cu ft/s (42.5 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Dec. 2	0645	*1,730	49.0	12.50	3.810

Minimum discharge, 1.2 cu ft/s (0.034 cu m/s) May 5, 6, 8, 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	8.7	3.8	11	3.5	8.3	2.2	1.5	22	9.0	6.8	2.7
2	7.2	6.2	177	6.9	3.8	5.9	2.4	1.5	6.9	4.5	90	2.6
3	5.2	9.5	11	6.3	4.5	4.9	2.2	5.8	4.2	4.1	8.6	2.5
4	4.7	161	6.8	5.7	10	4.6	2.1	10	2.7	76	11	2.4
5	44	38	5.4	4.9	5.8	4.9	1.9	1.4	4.6	43	10	3.4
6	3.9	37	12	5.0	4.3	4.4	2.2	2.1	127	12	5.1	4.4
7	10	16	6.1	5.2	25	4.0	1.9	2.1	153	7.5	3.9	2.5
8	15	14	5.1	4.5	5.7	4.5	2.0	1.5	29	5.8	3.4	2.6
9	22	12	4.6	6.6	16	5.1	2.0	1.8	16	6.1	3.4	4.0
10	8.0	11	4.9	11	103	3.7	1.9	3.5	26	6.5	3.2	6.6
11	3.7	9.6	8.9	5.3	34	3.4	3.5	1.7	26	5.1	2.8	6.0
12	4.3	8.6	6.0	11	15	3.6	2.4	1.5	18	4.5	3.0	9.9
13	10	8.0	4.1	36	48	3.6	1.8	2.3	18	3.8	4.0	6.6
14	9.6	7.4	3.5	13	25	6.7	1.9	1.8	13	4.4	2.7	33
15	5.5	6.8	12	11	54	3.9	1.8	1.7	10	3.7	2.6	5.8
16	4.3	7.3	9.1	13	24	4.8	2.1	2.1	12	3.4	3.8	31
17	12	6.2	16	14	13	5.3	2.2	3.2	26	3.0	2.7	21
18	39	6.5	18	8.3	11	3.4	1.9	1.8	23	3.7	2.3	16
19	16	7.7	7.8	5.7	9.7	2.8	1.9	23	17	2.7	2.2	11
20	44	7.0	6.2	7.3	9.7	2.7	1.9	19	12	3.7	2.2	59
21	13	7.5	4.4	5.8	8.1	4.9	1.8	1.9	12	3.6	2.4	20
22	34	5.1	23	23	7.1	4.4	1.9	3.3	9.6	3.2	2.9	8.0
23	12	4.3	11	18	7.4	3.4	1.8	2.9	7.3	3.3	2.4	5.0
24	10	4.7	5.2	7.7	6.2	2.6	1.7	1.9	6.2	2.8	2.3	3.6
25	8.7	5.8	4.0	15	5.9	3.4	2.0	5.0	6.1	2.2	9.6	3.2
26	9.7	3.5	5.6	11	6.6	2.5	2.0	19	5.4	2.4	47	2.8
27	9.4	3.9	8.1	5.7	6.1	2.4	4.1	26	5.2	2.1	20	3.3
28	9.9	3.5	17	4.6	5.8	2.5	5.1	14	4.8	2.9	5.3	3.5
29	8.1	3.1	26	3.9	5.4	2.4	1.8	71	7.6	17	3.3	11
30	34	4.0	11	4.3	---	2.5	1.6	240	7.8	10	2.7	37
31	19	---	37	3.6	---	2.2	---	38	---	2.9	2.9	---
TOTAL	455.2	433.9	480.6	294.3	483.6	123.7	66.0	512.3	638.4	264.9	274.4	330.8
MEAN	14.7	14.5	15.5	9.49	16.7	3.99	2.20	16.5	21.3	8.55	8.85	11.0
MAX	44	161	177	36	103	8.3	5.1	240	153	76	90	59
MIN	3.7	3.1	3.5	3.6	3.5	2.2	1.6	1.4	2.7	2.1	2.2	2.4
CFSM	3.71	3.66	3.91	2.40	4.22	1.01	.56	4.17	5.38	2.16	2.26	2.78
IN.	4.28	4.07	4.51	2.76	4.54	1.16	.62	4.81	6.00	2.49	2.58	3.11
AC-FT	903	861	953	584	959	245	131	1020	1270	525	544	656

CAL YR 1983 TOTAL 7094.33 MEAN 19.4 MAX 565 MIN .95 CFSM 4.90 IN 66.63 AC-FT 14070
WTR YR 1984 TOTAL 4358.10 MEAN 11.9 MAX 240 MIN 1.4 CFSM 3.01 IN 40.93 AC-FT 8640

50067000 RIO SABANA AT SABANA, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 11	1225	3.6	121	26.5
NOV, 19	1350	5.2	158	26.0
DEC, 14	1525	3.8	121	24.5
JAN, 14	1559	5.2	123	23.0
FEB, 22	1414	7.7	108	22.5
MAR, 21	1337	2.8	147	23.0
MAR, 30	0945	2.4	146	24.0
APR, 13	0906	2.1	152	22.5
MAY, 24	1131	1.9	148	23.0
JUN, 07	1402	60	65	26.5
JUL, 20	0929	5.9	110	27.5
AUG, 07	1649	3.6	136	27.5
SEP, 14	1059	71	69	26.0

RIO FAJARDO BASIN

50071000 ..IO FAJARDO NEAR FAJARDO, PR

LOCATION.--Lat 18°17'56", long 65°41'42", Hydrologic Unit 21010005, on left bank off Highway 976, 0.1 mi (0.2 km) upstream from Highway 977 bridge, 0.3 mi (0.5 km) downstream from Quebrada Peñón, 1.1 mi (1.8 km) northeast of Colonia Paraíso, and 3.3 mi (5.3 km) southwest of Fajardo.

DRAINAGE AREA.--14.9 sq mi (38.6 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1960-61 (occasional low- and peak-flow measurements only), March 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 137.60 ft (41.940 m) above mean sea level. Due to flood damage, gage datum has had changes as follows: Mar. 24, 1961 to May 5, 1969, 138.95 ft (42.352 m); May 6, 1969 to Mar. 16, 1972, 135.05 ft (41.163 m); Mar. 17, 1972 to Mar 25, 1975, 138.60 ft (42.245 m).

REMARKS.--Records fair. Low flow affected by diversions for water supply.

AVERAGE DISCHARGE.--23 years (1962-84), 67.8 cu ft/s (1.920 cu m/s), 61.79 in/yr (1,569 mm/yr), 49,120 acre-ft/yr (60.6 cu hm/yr); median of yearly mean discharges, 69 cu ft/s, (1.95 cu m/s), 50,000 acre-ft/yr (62 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 cu ft/s (555 cu m/s), Oct. 24, 1974, gage height, 13.62 ft (4.151 m), datum then in use, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of step-backwater analyses and slope-area measurements of peak discharges; minimum, 0.86 cu ft/s (0.024 cu m/s) May 3, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 cu ft/s (99.1 cu m/s), and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 18	1630	*2,940	83.3	7.21	2.198

Minimum discharge, 0.86 cu ft/s (0.024 cu m/s) May 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	30	7.6	57	17	23	3.7	1.6	104	27	14	7.4
2	26	24	393	29	18	20	3.4	2.6	42	17	271	6.9
3	19	31	33	25	12	14	3.2	1.5	28	16	31	6.3
4	17	687	20	22	43	12	3.0	9.6	22	209	30	7.6
5	15	156	16	18	22	12	2.9	2.2	20	164	24	8.2
6	14	191	112	16	34	11	2.8	1.0	310	38	15	19
7	38	67	26	14	106	10	2.6	1.5	459	27	12	6.2
8	57	51	18	13	27	11	2.4	1.3	129	21	9.8	4.4
9	81	42	16	24	78	31	2.1	1.0	84	19	10	5.4
10	31	36	15	64	309	12	2.1	3.2	81	21	8.5	12
11	23	31	24	23	167	8.9	8.8	3.6	97	16	7.2	7.8
12	22	26	19	57	79	8.1	6.5	1.5	100	15	6.8	50
13	48	23	11	195	87	8.3	2.7	9.5	85	13	8.1	23
14	29	20	10	74	72	20	2.1	5.0	[illegible]	13	6.6	132
15	29	19	19	67	216	12	1.9	3.0	37	19	5.8	19
16	22	21	30	52	173	11	1.9	3.4	36	14	8.6	91
17	26	18	44	66	62	33	1.9	3.4	168	12	6.4	73
18	362	16	39	34	46	12	1.6	16	103	42	5.3	80
19	80	24	23	26	39	7.5	1.5	83	94	12	7.4	39
20	176	17	21	39	35	6.5	1.2	101	55	11	12	481
21	51	18	15	25	31	6.0	1.2	14	39	10	12	99
22	118	22	109	103	27	7.0	1.5	13	32	12	22	37
23	47	14	46	59	25	7.0	1.6	9.9	28	16	15	25
24	33	12	26	29	24	7.0	1.7	18	24	10	11	19
25	25	14	17	51	23	7.0	1.8	12	22	9.4	57	15
26	25	9.8	24	28	25	6.0	1.9	139	19	9.7	317	13
27	23	9.4	20	20	21	5.0	3.0	97	24	8.2	83	11
28	18	8.6	80	13	21	5.0	43	109	18	14	24	26
29	39	6.3	73	15	19	4.5	4.6	148	31	93	15	30
30	213	13	39	14	---	4.5	2.1	543	24	62	11	51
31	83	---	165	12	---	3.9	---	129	---	17	8.6	---
TOTAL	1861	1657.1	1510.6	1279	1858	346.2	120.7	1486.8	2356	987.3	1075.1	1405.2
MEAN	60.0	55.2	48.7	41.3	64.1	11.2	4.02	48.0	78.6	31.8	34.7	46.8
MAX	362	687	393	195	309	33	43	543	459	209	317	481
MIN	14	6.3	7.6	12	12	3.9	1.2	1.0	18	8.2	5.3	4.4
CFSM	4.03	3.71	3.27	2.77	4.30	.75	.27	3.22	5.28	2.13	2.33	3.14
IN.	4.65	4.14	3.77	3.19	4.64	.86	.30	3.71	5.89	2.46	2.68	3.51
AC-FT	3690	3290	3000	2540	3690	687	239	2950	4680	1960	2130	2790

CAL YR 1983 TOTAL 23298.1 MEAN 63.8 MAX 1500 MIN 3.9 CFSM 4.28 IN 58.16 AC-FT 46210
WTR YR 1984 TOTAL 15965.0 MEAN 43.6 MAX 687 MIN 1.0 CFSM 2.93 IN 39.81 AC-FT 31630

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1982 to current year.

INSTRUMENTATION.--Automatic sediment sampler since January 1983. USD-49 Sediment sampler since February 1983.

REMARKS.--Automatic sediment sampler set to collect samples above a streamflow of 100 ft^3/sec. In addition to automatic sediment sampler, samples were collected by a local observer once daily during low flow and more than once daily during high flow events for concentration and particle size analyses.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS:
Maximum daily mean, 1,360 mg/L April 21, 1983; Minimum daily mean, 0.0 mg/L may 9, 1983.

SEDIMENT LOADS:
Maximum daily, 19,800 tons (17,960 tonnes) April 21, 1983; minimum daily, 0.0 tons (0.0 tonnes) May 9, 1983.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS:
Maximum daily mean, 632 mg/L Oct. 18; Minimum daily mean, 1.0 mg/L several days.

SEDIMENT LOADS:
Maximum daily, 1,890 tons (1,710 tonnes) Oct. 18; minimum daily, 0.01 tons (0.01 tonnes) several days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
03...	1410	21	125	8.2	29.5	<1.0	9.0	118	24	200	570
DEC											
07...	1110	27	110	7.3	24.5	3.6	11.0	132	13	440	600
FEB , 1984											
02...	1135	17	115	7.8	25.5	2.7	9.6	118	<10	210	270
MAY											
01...	1315	1.6	134	7.7	29.0	1.4	9.6	125	21	48	K32
JUN											
04...	1345	21	111	7.6	31.0	1.4	11.0	149	<10	K1200	410
AUG											
06...	1245	16	114	7.8	29.5	11	9.0	118	<10	120	K160

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
03...	31	0	6.4	3.7	11	.9	1.2	34	4.7	13	.10
DEC											
07...	--	--	--	-	--	--	--	30	--	--	--
FEB , 1984											
02...	--	--	--	--	--	--	--	34	--	--	--
MAY											
01...	37	0	7.6	4.3	13	1	1.1	41	4.5	15	.20
JUN											
04...	--	--	--	--	--	--	--	28	--	--	--
AUG											
06...	29	0	6.2	3.4	10	.8	1.1	30	4.6	12	<.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983										
03...	27	87	5.0	7	<.01	.30	<.01	--	.80	1.1
DEC										
07...	--	--	--	4	<.01	.30	<.01	--	.20	.50
FEB , 1984										
02...	--	--	--	12	<.01	.30	<.01	--	.60	.90
MAY										
01...	28	99	.42	4	<.01	.20	.07	1.3	1.4	1.6
JUN										
04...	--	--	--	1	<.01	<.10	.02	1.3	1.3	--
AUG										
06...	23	78	3.4	2	<.01	<.10	<.01	--	.40	--

K = non-ideal count

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY RECORDS, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
03...	4.9	.03	4	<100	1	4	1	.3	<1	<1
DEC										
07...	2.2	.02	--	--	--	--	--	--	--	--
FEB , 1984										
02...	4.0	.04	--	--	--	--	--	--	--	--
MAY										
01...	7.1	.02	1	<100	1	<1	6	<.1	<1	<1
JUN										
04...	--	.03	--	--	--	--	--	--	--	--
AUG										
06...	--	.03	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
JAN, 04	1155	20	118	26.0	MAY, 01	1230	1.6	128	29.0
MAR, 05	1134	11	125	26.0					

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JUN , 1984								
04...	1345	<.1	<.01	<.1	<.01	<.01	<.01	<.01

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JUN , 1984									
04...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)
JUN , 1984								
04...	<.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED CONCEN-TRATION (MG/L)	SEDI-MENT, SUS-PENDED DIS-CHARGE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
JAN , 1983								
13...	1015	25.0	166	1650	675	3	5	8
13...	1030	25.0	156	1760	741	2	3	8
13...	1045	25.0	173	[illegible]	638	7	12	20
MAY , 1984								
19	2245	26.5	1280	1580	5460	19	22	30

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
JAN , 1984							
13...	23	47	70	79	88	95	99
13...	29	47	64	74	86	96	97
13...	35	59	69	81	90	96	99
MAY , 1984							
19	45	66	69	92	97	99	100

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50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
03...	1410	21	125	8.2	29.5	<1.0	9.0	118	24	200	570
DEC											
07...	1110	27	110	7.3	24.5	3.6	11.0	132	13	440	600
FEB , 1984											
02...	1135	17	115	7.8	25.5	2.7	9.6	118	<10	210	270
MAY											
01...	1315	1.6	134	7.7	29.0	1.4	9.6	125	21	68	K32
JUN											
04...	1345	21	111	7.6	31.0	1.4	11.0	149	<10	K1200	410
AUG											
06...	1245	16	114	7.8	29.5	11	9.0	118	<10	120	K160

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
03...	31	0	6.4	3.7	11	.9	1.2	34	4.7	13	.10
DEC											
07...	--	--	--	--	--	--	--	30	--	--	--
FEB , 1984											
02...	--	--	--	--	--	--	--	34	--	--	--
MAY											
01...	37	0	7.6	4.3	13	1	1.1	41	4.5	15	.20
JUN											
04...	--	--	--	--	--	--	--	28	--	--	--
AUG											
06...	29	0	6.2	3.4	10	.6	1.1	30	4.6	12	<.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983										
03...	27	87	5.0	7	<.01	.30	<.01	--	.80	1.1
DEC										
07...	--	--	--	4	<.01	.30	<.01	--	.20	.50
FEB , 1984										
02...	--	--	--	12	<.01	.30	<.01	--	.60	.90
MAY										
01...	28	98	.42	4	<.01	.20	.07	1.3	1.4	1.6
JUN										
04...	--	--	--	1	<.01	<.10	.02	1.3	1.3	--
AUG										
06...	23	78	3.4	2	<.01	<.10	<.01	--	.40	--

K = non-ideal count

RIO FAJARDO BASIN

50071000 RIO FAJARDO NR FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	71	54	11	30	10	.81	7.6	8	.16
2	26	25	1.8	24	5	.32	393	364	1220
3	19	24	1.2	31	19	1.6	33	35	3.1
4	17	26	1.2	657	347	834	20	22	1.2
5	15	48	1.9	156	33	26	16	10	.43
6	14	6	.23	191	68	59	112	60	50
7	38	1	.03	67	9	1.6	26	9	.63
8	57	57	5.4	51	25	3.4	18	2	.10
9	81	41	9.0	42	10	1.1	16	9	.39
10	31	18	1.5	36	9	.87	15	4	.16
11	23	1	.06	31	10	.84	26	8	.52
12	22	2	.11	26	9	.63	19	4	.21
13	48	5	.65	23	9	.58	11	7	.21
14	29	1	.08	20	23	1.2	10	1	.03
15	29	1	.06	19	9	.46	19	1	.05
16	22	1	.07	21	6	.34	30	2	.16
17	26	2	.17	18	6	.29	44	3	.36
18	362	632	1890	16	6	.26	39	1	.11
19	80	53	11	24	7	.45	23	2	.12
20	176	80	100	17	8	.37	21	1	.06
21	51	2	.28	19	1	.05	15	2	.08
22	118	130	185	22	3	.18	109	50	50
23	47	21	2.7	14	13	.49	46	12	1.5
24	33	1	.09	12	12	.39	26	7	.49
25	25	1	.07	14	15	.57	17	1	.05
26	25	5	.34	9.8	12	.32	24	1	.06
27	23	11	.68	9.4	11	.28	20	10	.56
28	18	18	.87	8.6	10	.23	80	7	1.5
29	39	3	.13	6.3	9	.15	73	51	15
30	213	192	266	13	9	.37	39	4	.36
31	83	21	4.7	---	---	---	165	370	445
TOTAL	1861	---	2496.32	1657.1	---	937.10	1510.6	---	1792.58

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	57	8	1.2	17	2	.09	23	6	.37
2	29	7	.55	18	21	1.0	20	15	.81
3	25	6	.41	12	1	.03	14	4	.15
4	22	3	.18	43	25	2.9	12	36	1.2
5	18	1	.05	22	4	.24	12	23	.75
6	16	1	.04	36	10	.92	11	5	.11
7	14	1	.04	106	49	28	10	1	.03
8	13	1	.04	27	8	.58	11	4	.12
9	24	10	.65	78	38	12	31	25	4.1
10	64	16	2.8	309	120	142	12	4	.13
11	28	1	.08	167	71	52	8.9	11	.26
12	57	2	.31	79	10	2.1	8.1	1	.02
13	195	226	285	87	12	2.8	8.3	1	.02
14	74	34	6.8	72	4	.78	20	10	.54
15	47	8	1.0	216	136	121	12	13	.42
16	52	7	.98	173	55	53	11	7	.21
17	66	8	1.4	62	1	.17	33	21	5.0
18	34	15	1.4	46	1	.12	12	2	.06
19	26	29	2.0	39	2	.21	7.5	6	.12
20	39	10	1.1	35	10	.95	6.5	15	.24
21	25	9	.61	31	1	.08	6.0	5	.08
22	108	130	138	27	1	.07	7.0	23	.43
23	59	15	2.4	25	2	.14	7.0	37	.70
24	29	6	.47	24	4	.26	7.0	45	.85
25	51	7	.96	23	7	.43	7.0	2	.04
26	28	8	.60	25	3	.20	6.0	8	.13
27	20	5	.27	21	3	.17	5.0	3	.04
28	18	6	.29	21	19	1.1	5.0	1	.01
29	15	43	1.7	19	8	.41	4.5	13	.16
30	14	20	.76	---	---	---	4.5	1	.01
31	12	3	.10	---	---	---	3.9	1	.01
TOTAL	1279	---	452.19	1698	---	623.75	346.2	---	17.14

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RIO FAJARDO BASIN

50071000 RIO FAJARDO NR FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	3.7	2	.02	1.6	3	.01	104	41	30
2	3.4	26	.24	2.6	2	.01	42	1	.11
3	3.2	17	.15	1.5	3	.01	28	9	.68
4	3.0	2	.02	9.6	9	.23	22	2	.12
5	2.9	30	.23	2.2	2	.01	20	1	.05
6	2.8	6	.05	1.0	4	.01	310	201	701
7	2.6	21	.15	1.5	8	.03	459	185	493
8	2.4	35	.23	1.3	10	.04	129	15	8.9
9	2.1	15	.09	1.0	22	.06	84	22	9.1
10	2.1	35	.20	3.2	10	.09	81	31	6.8
11	8.8	26	.62	3.6	10	.10	97	16	6.0
12	6.5	15	.26	1.5	12	.05	100	60	40
13	2.7	3	.02	9.5	33	.85	95	26	9.3
14	2.1	12	.07	5.0	4	.05	53	4	.57
15	1.9	35	.18	3.0	9	.07	37	6	.60
16	1.9	8	.04	3.4	4	.04	36	35	7.8
17	1.9	41	.21	3.4	22	.93	168	74	74
18	1.6	17	.07	16	81	5.4	103	49	33
19	1.5	59	.24	33	92	176	94	46	22
20	1.2	13	.04	101	52	64	55	4	1.1
21	1.2	21	.07	14	15	.57	39	1	.11
22	1.5	3	.01	13	1	.04	32	1	.09
23	1.6	4	.02	9.9	1	.03	28	2	.15
24	1.7	13	.06	18	1	.05	24	1	.06
25	1.8	3	.01	12	24	4.3	22	1	.06
26	1.9	7	.03	139	58	58	19	1	.05
27	3.0	31	.55	97	41	46	24	1	.06
28	43	19	6.1	109	32	25	18	1	.05
29	4.6	25	.31	148	159	238	31	10	.84
30	2.1	2	.01	543	533	1550	24	1	.06
31	---	---	---	129	50	34	---	---	---
TOTAL	120.7	---	10.30	1486.8	---	2203.98	2358	---	1445.66

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	27	1	.07	14	39	3.1	7.4	1	.02
2	17	1	.05	271	190	311	6.9	1	.02
3	16	2	.09	31	25	2.1	6.3	10	.17
4	209	206	335	30	1	.08	7.6	7	.14
5	164	58	59	24	10	.65	8.2	1	.02
6	38	1	.10	15	7	.28	19	13	.67
7	27	19	1.4	12	5	.16	6.2	1	.02
8	21	1	.06	9.8	1	.03	4.4	5	.06
9	19	1	.05	10	5	.14	5.4	11	.16
10	21	2	.11	8.5	1	.02	12	18	.58
11	16	1	.04	7.2	4	.08	7.8	75	1.6
12	15	1	.04	6.8	3	.06	50	36	9.3
13	13	16	.49	8.1	1	.02	23	17	1.3
14	13	5	.18	6.6	2	.04	132	196	214
15	19	115	5.9	5.0	6	.09	19	11	.82
16	14	2	.08	8.6	12	.28	9.[illegible]	76	86
17	12	7	.43	5.4	4	.07	73	110	27
18	42	11	3.2	5.3	1	.01	80	63	19
19	12	1	.03	7.4	1	.02	39	8	.84
20	11	1	.03	12	2	.06	481	315	806
21	10	2	.05	12	3	.10	99	50	16
22	12	1	.03	22	10	.59	37	27	2.7
23	16	96	4.1	15	25	1.0	25	1	.07
24	10	1	.03	17	1	.03	19	2	.10
25	9.4	1	.03	57	54	32	15	7	.28
26	9.7	9	.24	317	146	324	13	4	.14
27	8.2	3	.07	83	17	3.8	11	7	.21
28	14	10	.57	24	7	.45	26	20	1.5
29	93	36	29	15	16	.65	30	69	5.1
30	62	15	5.7	11	8	.24	51	33	3.1
31	17	2	.09	8.6	1	.02	---	---	---
TOTAL	987.3	---	446.26	1075.1	---	681.17	1605.2	---	1196.92
YEAR	15945.0		12103.27						

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50072500 RIO FAJARDO BELOW FAJARDO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°19'35", long 65°38'47", 1.2 mi (1.9 km) southwest of Playa de Fajardo, and 0.5 mi (0.8 km) east of Fajardo Plaza.

DRAINAGE AREA.--23.4 sq mi (60.6 sq km).

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT, 1983											
11...	1055	27	161	7.2	29.0	2.9	7.0	91	110	K43000	K15000
DEC											
07...	1500	35	146	7.4	29.5	25	11.0	144	23	4700	560
FEB, 1984											
02...	1555	23	167	7.8	23.5	16	9.7	125	10	300	K73
MAY											
08...	1125	3.9	306	7.3	28.0	1.8	7.9	101	16	36000	K1200
JUN											
19...	1310	56	123	7.4	29.0	26	8.6	111	<10	K13000	2600
AUG											
20...	1150	10	331	7.5	30.0	1.0	9.2	120	<10	570	K50

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT, 1983											
11...	40	2	9.6	4.0	14	1	1.3	38	5.8	23	.10
DEC											
07...	--	--	--	--	--	--	--	31	--	--	--
FEB, 1984											
02...	--	--	--	--	--	--	--	44	--	--	--
MAY											
08...	85	25	24	5.2	25	1	2.0	61	8.2	51	.10
JUN											
19...	--	--	--	--	--	--	--	33	--	--	--
AUG											
20...	66	9	17	5.8	21	1	1.5	57	7.4	42	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT, 1983											
11...	22	100	7.5	4	--	<.01	<.10	.37	.33	.70	--
DEC											
07...	--	--	--	12	--	<.01	.30	<.01	--	<.10	--
FEB, 1984											
02...	--	--	--	14	.09	.01	.10	.04	1.8	1.8	1.9
MAY											
08...	21	170	1.8	4	.22	.08	.30	.45	.45	.90	1.2
JUN											
19...	--	--	--	19	.28	.02	.30	.11	.19	.30	.60
AUG											
20...	23	150	4.2	4	--	<.01	<.10	.05	.35	.40	--

K = non-ideal count

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RIO FAJARDO BASIN

50072500 RIO FAJARDO BELOW FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
11...	--	.39	2	<100	1	2	1	.1	<1	<1
DEC										
07...	--	.04	--	--	--	--	--	--	--	--
FEB , 1984										
02...	9.4	.06	--	--	--	--	--	--	--	--
MAY										
08...	5.3	.29	1	<100	1	<1	3	.1	<1	<1
JUN										
19...	2.7	.08	--	--	--	--	--	--	--	--
AUG										
20...	--	<.01	--	--	--	--	--	--	--	--

RIO BLANCO BASIN

50075000 RIO ICACOS NEAR NAGUABO, PR

LOCATION.--Lat 18°16'38", long 65°47'09", Hydrologic Unit 21010001, in Caribbean National Forest, off Highway 191, at El Yunque, 1.6 mi (2.6 km) upstream from confluence with Río Cubuy, 2.8 mi (4.5 km) north of Florida, and 5.3 mi (8.5 km) northwest of Naguabo Plaza.

DRAINAGE AREA.--1.26 sq mi (3.26 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1945 to March 1953 (operated by Puerto Rico Water Resources Authority), annual maximum, water years 1953-62, annual low-flow measurements 1962-66, October 1979 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 2,020 ft (616 m), from topographic map.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--12 years (1946-52, 1980-84), 15.3 cu ft/s (0.433 cu m/s), 164.90 in/yr (4,188 mm/yr), 11,080 acre-ft/yr (13.7 cu hm/yr); median of yearly mean discharges, 14 cu ft/s (0.40 cu m/s), 10,100 acre-ft/yr (12 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,860 cu ft/s (81.0 cu m/s) Apr. 21, 1983, gage height 8.96 ft (2.731 m), from rating curve extended above 30 cu ft/s (0.850 cu m/s) on basis of step-backwater analysis; minimum daily, 1.5 cu ft/s (0.042 cu m/s) Mar. 22, Apr. 10, 1946.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 650 cu ft/s (18.4 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Aug. 26	1745	*641	18.2	5.26	1.603

Minimum observed discharge, 4.0 cu ft/s (0.113 cu m/s) Apr. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	7.5	7.0	11	6.5	7.0	4.0	4.5	8.5	12	18	5.8
2	7.2	7.0	75	8.5	6.0	6.5	4.0	4.0	7.5	8.0	35	5.2
3	6.7	10	8.0	5.0	6.5	6.0	4.0	11	6.5	12	11	5.2
4	6.5	60	6.5	8.0	14	6.0	4.0	13	7.4	80	14	5.0
5	6.0	16	5.6	7.5	8.5	6.0	4.0	6.0	6.0	40	16	10
6	6.0	65	35	7.0	9.5	6.0	4.0	7.5	40	9.5	10	6.2
7	7.3	10	8.0	7.0	15	5.5	4.0	4.8	35	8.0	6.0	5.1
8	8.8	8.5	7.0	6.5	7.5	5.5	4.0	5.0	9.0	7.0	5.9	4.8
9	12	8.0	6.5	10	30	9.0	4.0	7.0	17	7.0	5.8	5.5
10	6.9	7.5	7.0	13	55	6.0	4.0	10	23	7.0	5.6	5.5
11	6.1	7.5	20	12	20	6.0	4.0	6.5	12	9.0	5.6	8.2
12	7.8	7.5	6.0	22	17	6.0	4.0	5.5	11	7.5	5.5	13
13	10	7.5	5.1	45	35	9.0	4.0	5.5	14	6.8	5.3	20
14	8.3	7.4	5.4	15	14	12	4.0	5.2	9.0	7.8	5.2	31
15	9.5	7.3	8.9	8.5	40	6.0	4.0	13	7.0	9.0	5.2	8.6
16	6.7	7.0	11	10	30	6.5	4.0	6.5	11	8.5	5.4	53
17	8.5	7.0	13	11	9.0	10	5.2	7.5	17	6.0	5.2	14
18	16	7.0	17	12	9.5	7.0	4.0	6.5	9.8	6.0	4.9	14
19	10	7.0	10	7.5	9.0	5.6	4.0	14	25	5.5	4.8	8.6
20	10	7.0	9.5	9.0	11	5.5	6.5	14	10	5.5	5.4	51
21	8.0	7.0	7.5	6.5	6.9	5.2	5.5	7.0	8.0	6.0	5.1	10
22	7.0	6.5	15	7.5	7.5	5.5	4.5	8.0	7.0	6.0	6.4	7.6
23	6.5	6.0	12	15	6.5	9.5	4.5	7.5	6.5	7.5	5.3	6.8
24	6.9	7.5	8.5	9.5	6.5	9.5	4.0	5.8	6.0	10	4.8	6.4
25	4.5	6.0	7.0	16	6.5	8.0	4.0	6.0	6.0	6.5	20	6.2
26	6.0	6.0	6.5	12	6.5	7.5	4.0	50	6.0	8.5	102	6.0
27	6.0	6.0	10	8.5	7.0	5.0	6.0	50	5.5	6.0	15	7.1
28	6.0	6.0	14	9.5	7.0	4.0	15	22	6.0	8.0	7.8	9.0
29	11	6.0	22	7.5	6.0	4.5	7.0	55	8.0	23	6.3	7.4
30	40	8.5	15	6.9	---	4.0	4.8	100	13	14	6.5	12
31	20	---	40	6.5	---	4.0	---	12	---	8.0	6.2	---
TOTAL	296.2	337.2	429.0	341.9	413.4	203.8	143.0	480.3	337.7	363.6	365.2	357.2
MEAN	9.55	11.2	13.8	11.0	14.3	6.57	4.77	15.5	11.9	11.7	11.8	11.9
MAX	40	65	75	45	55	12	15	100	40	80	102	53
MIN	6.0	6.0	5.1	6.0	6.0	4.0	4.0	4.0	5.5	5.5	4.8	4.8
CFSM	7.58	8.89	11.0	8.73	11.3	5.21	3.79	12.3	9.44	9.29	9.37	9.44
IN.	8.74	9.95	12.66	10.09	12.20	6.01	4.22	14.17	10.55	10.73	10.77	10.54
AC-FT	588	669	851	678	820	404	264	953	709	721	724	709

CAL YR 1983 TOTAL 4399.5 MEAN 12.1 MAX 267 MIN 3.2 CFSM 9.60 IN 129.79 AC-FT 8730
WTR YR 1984 TOTAL 4088.5 MEAN 11.2 MAX 102 MIN 4.0 CFSM 8.89 IN 120.61 AC-FT 8110

50075000 RIO ICACOS NEAR NAGUABO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 05	1315	5.8	65	22.0	MAR, 21	0945	5.2	115	19.0
NOV, 21	1144	7.1	59	22.0	MAR, 29	1548	4.5	75	20.5
DEC, 13	1043	5.2	65	18.5	MAY, 24	1217	5.9	56	20.5
JAN, 19	1253	7.4	62	20.0	JUL, 13	1205	6.4	60	24.0
FEB, 23	1003	6.5	106	19.0	AUG, 07	1424	5.8	68	20.5

RIO BLANCO BASIN

50076000 RIO BLANCO NEAR FLORIDA, PR

LOCATION.--Lat 18°13'45", long 65°47'06", Hydrologic Unit 2101005, on left bank of Highway 191, 0.5 mi (0.8 km) upstream from Quebrada Sonadora, 0.7 mi (1.1 km) upstream from intersection of Highway 191 and 31, 0.8 mi (1.3 km) south of Florida.

DRAINAGE AREA.--12.3 sq mi (31.9 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 50 ft (15 m), from topographic map.

REMARKS.--Records fair. Low flow affected by diversion for water supply.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 cu ft/s (312 cu m/s), Apr. 21, 1983, gage height 22.76 ft (6.937 m) from rating curve extended above 200 cu ft/s (5.664 cu m/s) on basis of step-backwater analysis and slope-area measurement; minimum, 8.8 cu ft/s (0.249 cu m/s) Apr. 10, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 cu ft/s (85.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 6	0430	4,290	121	16.98	5.176	June 6	2315	3,310	93.7	15.79	4.813
Dec. 2	0800	3,010	85	15.40	4.694	Aug. 26	1800	*5,660	160	18.43	5.617

Minimum discharge, 13 cu ft/s (0.68 cu m/s) Apr. 19, 20

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	40	29	43	28	44	15	14	60	48	47	23
2	39	30	303	30	23	30	15	14	46	43	143	22
3	36	51	47	27	27	25	16	15	37	41	32	21
4	31	441	34	29	73	24	16	17	31	212	57	20
5	31	94	35	25	32	23	15	15	27	201	32	43
6	29	636	113	24	55	23	14	15	334	52	23	40
7	37	80	43	23	68	23	15	16	247	41	21	22
8	107	59	38	22	40	26	15	15	72	34	20	20
9	105	52	33	33	141	47	15	19	103	34	19	20
10	44	52	36	68	171	25	15	36	108	37	18	25
11	33	45	53	41	139	24	29	[illegible]	142	33	17	40
12	31	42	41	58	107	26	17	20	82	32	18	107
13	59	40	32	138	147	30	15	50	79	30	17	134
14	43	41	29	109	92	53	14	30	54	53	16	184
15	75	39	39	50	205	28	14	24	43	45	17	51
16	43	38	78	82	185	32	14	19	36	30	19	226
17	39	36	78	93	58	74	14	40	82	38	17	123
18	213	35	80	59	42	22	14	41	50	42	16	146
19	75	40	49	44	36	19	14	71	158	24	16	55
20	165	37	54	86	35	17	14	75	67	22	18	393
21	53	33	34	37	32	16	17	24	38	26	16	85
22	58	34	84	39	31	17	15	36	36	27	24	44
23	41	31	47	71	28	36	15	52	34	[illegible]	17	34
24	36	29	35	35	28	21	15	61	32	25	16	30
25	44	34	30	83	29	18	14	30	30	22	54	28
26	37	29	28	34	28	18	15	216	29	23	588	28
27	32	29	28	26	36	16	53	157	36	21	121	27
28	29	28	54	27	30	15	115	304	33	22	39	43
29	38	29	54	22	27	16	21	134	100	160	23	[illegible]
30	251	45	62	22	---	16	18	334	50	67	29	29
31	100	---	139	20	---	15	---	86	---	35	26	---
TOTAL	1993	2249	1839	1500	1973	819	606	2000	2276	1551	1536	2091
MEAN	64.3	75.0	59.3	48.4	68.0	26.4	20.2	64.5	75.9	50.0	49.5	69.7
MAX	251	636	303	138	205	74	115	334	334	212	588	393
MIN	29	28	28	20	23	15	14	14	27	21	16	20
CFSM	5.23	6.10	4.82	3.94	5.53	2.15	1.64	5.24	6.17	4.07	4.02	5.67
IN.	6.03	6.80	5.56	4.54	5.97	2.48	1.83	6.05	6.88	4.69	4.65	6.32
AC-FT	3950	4460	3650	2980	3910	1620	1200	3970	4510	3080	3050	4150

CAL YR 1983 TOTAL 24029.3 MEAN 65.8 MAX 1220 MIN 9.6 CFSM 5.35 IN 72.67 AC-FT 47660
WTR YR 1984 TOTAL 20433.0 MEAN 55.8 MAX 636 MIN 14 CFSM 4.54 IN 61.79 AC-FT 40530

RIO BLANCO BASIN

50076000 RIO BLANCO NEAR FLORIDA, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--OCTOBER 1982 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 11	1125	31	96	27.0
NOV. 03	1447	35	95	23.5
DEC. 12	1359	37	97	26.5
JAN. 11	1050	33	93	23.5
FEB. 14	1244	74	86	24.0
MAR. 06	1434	24	100	26.5
MAR. 26	1550	17	102	29.0
APR. 10	1039	15	118	25.5
MAY. 23	1159	32	99	26.0
JUN. 18	1329	52	59	34.0
JUL. 25	1234	22	105	28.0
AUG. 17	1010	17	110	27.0

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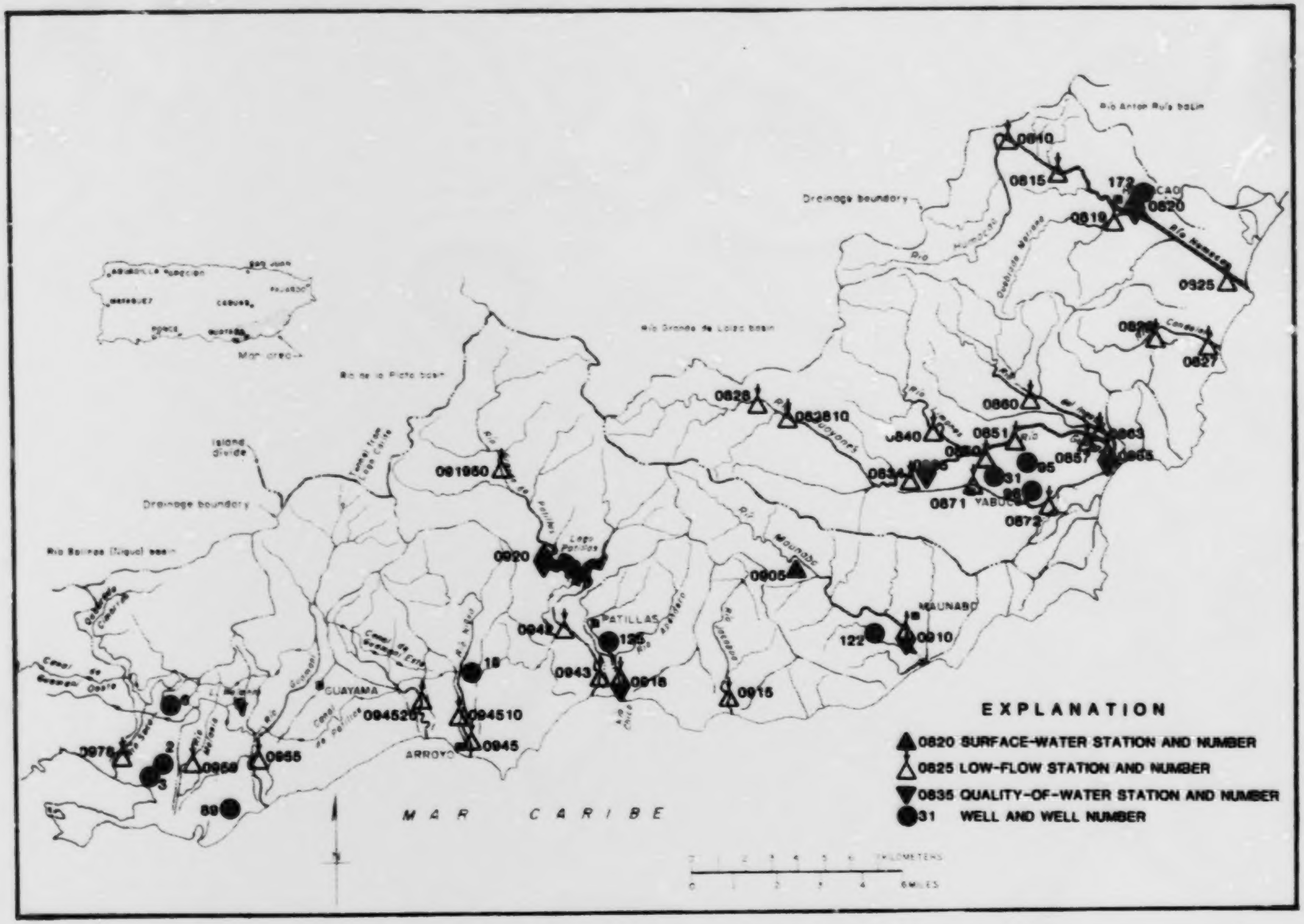
Río Antón Ruíz basin
0810
0815
173
HUMACAO
0820
Drainage boundary
0819
Río Humacao
Quebrada Mariana
0825
Río Grande de Loíza basin
0826
0827
Río de la Plata basin
0828
082810
Río Guayanés
0840
0860
0851
0863
0865
0857
0834
0835
0850
95
31
0871
YABUCOA
0872
Island divide
Tunnel from Lago Carite
091950
Río Grande de Patillas
Drainage boundary
Río Bairoas (Jigual) basin
0920
Lago Patillas
Río Maunabo
0905
MAUNABO
122
0910
0942
PATILLAS
125
Río Jacaboa
0943
0918
0915
Río Chico
18
GUAYAMA
Río Guamaní
Canal de Guamaní Este
Canal de Guamaní Oeste
Canal de Patillas
094520
094510
0945
ARROYO
0978
0958
0955
89
MAR CARIBE
EXPLANATION
0820 SURFACE-WATER STATION AND NUMBER
0825 LOW-FLOW STATION AND NUMBER
0835 QUALITY-OF-WATER STATION AND NUMBER
31 WELL AND WELL NUMBER
0 1 2 3 4 5 6 KILOMETERS
0 1 2 3 4 6 MILES
San Juan
Mar Caribe

Figure 19.--Southeastern river basins--Río Humacao to Río Seco basins.

RIO HUMACAO BASIN

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR

LOCATION.--Lat 18°08'49", long 65°49'37", at bridge on Highway 3, 300 ft (91 m) downstream from Quebrada Mariana, and 0.4 mi (0.6 km) south of Humacao.

DRAINAGE AREA.--17.3 sq mi (44.8 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage 33.33 ft (10.16 m) above mean sea level.

REMARKS.--Records fair.

EXTREMES FOR PERID OF RECORD.--Maximum discharge, 9,940 cu ft/s (282 cu m/s) July 5, 1983, gage height, 15.00 ft (4.572 m) on basis of rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of step-backwater analysis and slope-area measurement of peak flow; minimum 7.9 cu ft/s (0.224 cu m/s) May 1-4, 9, 10, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 cu ft/s (56.6 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 5	unknown	*3,500	99.1	unknown	

Minimum discharge, 7.9 cu ft/s (0.224 cu m/s) May 1-4, 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	39	30	28	19	21	13	9.6	26	27	27	20
2	45	28	217	25	20	19	13	9.9	28	30	67	15
3	40	32	51	24	21	15	13	12	17	23	27	15
4	39	370	37	24	21	15	15	11	225	28	75	20
5	38	390	41	23	19	15	22	11	181	64	32	101
6	39	275	43	25	21	20	21	10	87	29	23	47
7	32	85	33	24	24	23	22	11	60	24	20	20
8	32	67	29	22	21	23	15	11	107	24	18	17
9	65	56	29	29	18	22	14	9.3	154	21	18	30
10	32	48	31	45	24	21	14	8.6	91	36	17	23
11	26	41	29	25	24	20	14	11	124	26	17	22
12	43	39	30	25	28	20	15	14	97	23	17	33
13	32	39	28	43	105	19	13	15	57	22	17	232
14	26	38	35	50	46	19	14	14	41	31	16	299
15	30	37	31	29	152	19	12	13	46	26	17	88
16	32	36	28	25	292	19	11	11	66	23	21	106
17	26	35	27	25	61	18	12	11	71	20	18	143
18	53	34	29	24	40	15	11	10	38	21	18	139
19	64	34	27	20	32	17	9.8	9.8	31	24	19	114
20	30	33	26	51	28	17	15	14	28	25	19	191
21	26	32	27	28	27	16	14	16	28	48	19	131
22	25	33	26	27	26	15	16	18	26	35	20	69
23	23	33	28	24	24	16	13	38	26	37	18	65
24	21	31	26	21	25	15	13	45	25	29	17	44
25	21	31	27	33	21	15	11	20	23	23	16	41
26	69	29	28	22	21	14	10	36	22	23	168	36
27	26	31	31	20	23	14	12	30	21	24	95	37
28	23	29	28	22	23	14	15	60	23	37	27	35
29	32	29	23	20	19	14	11	50	29	74	24	30
30	37	30	36	19	---	13	9.4	210	29	55	22	37
31	65	---	49	19	---	13	---	73	---	25	23	---
TOTAL	1120	2064	1160	841	1225	549	413.2	820.2	1827	960	952	2180
MEAN	36.1	68.8	37.4	27.1	42.2	17.7	13.8	26.5	60.9	31.0	30.7	72.7
MAX	69	390	217	51	292	23	22	210	225	74	168	299
MIN	21	28	23	19	18	13	9.4	8.6	17	20	16	15
CFSM	2.09	3.98	2.16	1.57	2.44	1.02	.80	1.53	3.52	1.79	1.78	4.20
IN.	2.41	4.44	2.49	1.81	2.63	1.18	.89	1.76	3.93	2.06	2.05	4.69
AC-FT	2220	4090	2300	1670	2430	1090	820	1630	3620	1900	1890	4320

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CAL YR 1983   TOTAL   19458.0    MEAN 53.3    MAX  1760    MIN 10      CFSM 3.08    IN 41.84    AC-FT  38590
WTR YR 1984   TOTAL   14111.4    MEAN 38.6    MAX   390    MIN  8.6    CFSM 2.23    IN 30.34    AC-FT  27990
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RIO HUMACAO BASIN

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°08'49", long 65°49'37", at bridge on Highway 3, 300 ft (91 m) downstream from Quebrada Mariana, and 0.4 mi (0.6 km) south of Humacao plaza.

DRAINAGE AREA.--17.3 sq mi (44.8 sq km).

PERIOD OF RECORD.--Water years 1958-66, 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
05...	1150	36	254	7.6	29.0	33	8.2	107	13	22000	32000
DEC											
09...	1045	27	266	7.4	24.5	17	8.6	103	20	K11000	K4500
MAR											
14...	0940	19	264	7.8	25.5	25	8.1	99	10	310000	70000
APR											
25...	1120	15	272	7.8	29.5	34	9.6	126	12	K7200	2900
JUN											
27...	1135	22	266	7.4	30.5	37	7.9	105	24	85000	21000
AUG											
10...	1130	16	286	7.4	29.0	7.2	5.7	86	<10	K630000	58000

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
05...	72	0	19	6.0	24	1	1.7	77	9.4	23	.20
DEC											
09...	--	--	--	--	--	--	--	82	--	--	--
MAR											
16...	--	--	--	--	--	--	--	84	--	--	--
APR											
25...	80	0	22	6.1	23	1	1.7	94	15	29	.20
JUN											
27...	--	--	--	--	--	--	--	85	--	--	--
AUG											
10...	89	0	24	7.1	24	1	1.9	92	14	25	.20

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
05...	40	170	16	8	.77	.03	.80	.23	.27	.50	1.3
DEC											
09...	--	--	--	40	.78	.02	.80	.13	--	<.10	--
MAR											
16...	--	--	--	47	.57	.03	.60	1.00	.30	1.3	1.9
APR											
25...	37	190	7.4	94	.57	.03	.60	.16	2.8	3.0	3.6
JUN											
27...	--	--	--	68	.58	.02	.60	.50	.50	1.0	1.6
AUG											
10...	41	200	8.6	105	.65	.05	.70	.39	1.9	2.3	3.0

K = non-ideal count

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50082800 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
05...	5.9	.18	5	100	1	11	6	<.1	<1	<1
DEC										
09...	--	.17	--	--	--	--	--	--	--	--
MAR										
16...	8.6	.34	--	--	--	--	--	--	--	--
APR										
25...	16	.33	1	100	1	5	6	.1	<1	<1
JUN										
27...	7.1	.29	--	--	--	--	--	--	--	--
AUG										
10...	13	.27	--	--	--	--	--	--	--	--

RIO GUAYANES BASIN

50083500 RIO GUAYANES AT YABUCOA, PR

WATER-QUALITY RECORDS

LOCATION.—Lat 18°03'33", long 65°54'03", at bridge on Highway 182, 1.4 mi (2.2 km) west-northwest of Yabucoa plaza.

DRAINAGE AREA.—17.2 sq mi (44.6 sq km).

PERIOD OF RECORD.—Water years 1958-62, 1968-70, 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983 19...	1245	70	104	7.0	26.5	65	7.0	87	43	46000	40000
DEC 21...	1335	33	160	7.2	25.0	26	8.0	97	<10	2000	K1200
MAR , 1984 16...	1515	29	153	7.6	26.0	13	8.4	104	<10	500	630
APR 27...	1330	18	165	7.4	27.0	7.6	8.6	109	<10	K800	520
JUL 04...	1210	33	151	7.2	26.0	15	7.6	94	30	K3000	K3000
AUG 30...	1165	25	157	7.2	27.0	5.9	7.7	96	17	K1400	500

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983 19...	27	0	6.8	2.5	9.6	.8	1.7	30	8.9	8.0	.20
DEC 21...	--	--	--	--	--	--	--	54	--	--	--
MAR , 1984 16...	--	--	--	--	--	--	--	57	--	--	--
APR 27...	48	0	12	4.3	15	1	1.2	62	3.5	12	.20
JUL 04...	--	--	--	--	--	--	--	52	--	--	--
AUG 30...	44	0	11	4.0	13	.9	1.3	54	4.0	13	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983 19...	23	79	15	126	<.01	.40	.06	.54	.60	1.0
DEC 21...	--	--	--	12	<.01	.40	.02	.48	.50	.90
MAR , 1984 16...	--	--	--	10	<.01	.30	<.01	--	<.10	--
APR 27...	37	120	5.9	8	<.01	.20	.02	.08	.10	.30
JUL 04...	--	--	--	25	<.01	.10	<.01	--	.20	.30
AUG 30...	35	110	7.7	5	<.01	.20	.04	.26	.30	.50

K = non-ideal count

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RIO GUAYANES BASIN

50083500 RIO GUAYANES AT YABUCOA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
19...	4.4	.26	1	<100	<1	4	3	<.1	<1	<1
DEC										
21...	4.0	.05	--	--	--	--	--	--	--	--
MAR , 1984										
16...	--	.02	--	--	--	--	--	--	--	--
APR										
27...	1.3	.06	1	<100	1	1	1	.3	<1	<1
JUL										
04...	1.3	.03	--	--	--	--	--	--	--	--
AUG										
30...	2.2	.03	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JUL , 1984								
04...	1210	<.1	<.01	<.1	<.01	<.01	<.01	<.01

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JUL , 1984									
04...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)
JUL , 1984								
04...	<.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

RIO GUAYANES BASIN

50086500 RIO GUAYANES ABOVE MOUTH AT PLAYA DE GUAYANES, PR

WATER-QUALITY RECORDS

LOCATION.—Lat 18°03'45", long 65°49'42", at old railroad crossing, 0.2 mi (0.3 km) from mouth, 0.4 mi (0.6 km) west of Playa de Guayanés, and 3.5 mi (5.6 km) northeast of Yabucoa Plaza.

DRAINAGE AREA.—34.0 sq mi (88.1 sq km).

PERIOD OF RECORD.—Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983 19...	1005	179	109	7.1	25.0	55	7.6	92	55	40000	100000
DEC 21...	1540	69	183	7.4	27.0	15	9.2	132	<10	2500	780
MAR , 1984 16...	1225	43	196	8.0	26.0	15	8.9	109	<10	K960	510
APR 27...	1125	27	192	7.6	29.0	3.5	8.5	112	<10	K950	380
JUL 04...	1440	57	158	7.6	29.0	15	7.8	101	15	K800	480
AUG 30...	1405	39	175	7.5	32.0	15	6.6	89	27	2000	250

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983 19...	28	0	6.9	2.5	10	.9	1.3	29	9.9	10	.10
DEC 21...	--	--	--	--	--	--	--	59	--	--	--
MAR , 1984 16...	--	--	--	--	--	--	--	67	--	--	--
APR 27...	53	0	13	4.9	18	1	1.6	69	5.8	16	.20
JUL 04...	--	--	--	--	--	--	--	55	--	--	--
AUG 30...	48	0	12	4.4	17	1	1.9	61	6.0	18	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983 19...	21	90	38	386	--	<.01	.40	.06	1.0	1.1	1.5
DEC 21...	--	--	--	8	.57	.03	.60	.10	.20	.30	.90
MAR , 1984 16...	--	--	--	17	--	<.01	.40	<.01	--	.10	.50
APR 27...	37	140	10	11	--	<.01	.10	<.01	--	.40	.50
JUL 04...	--	--	--	34	--	<.01	.20	<.01	--	.40	.60
AUG 30...	34	130	14	50	--	<.01	.20	.05	.45	.50	.70

K = non-ideal count

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RIO GUAYANES BASIN

50086500 RIO GUAYANES ABOVE MOUTH AT PLAYA DE GUAYANES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
19...	6.6	.10	1	100	<1	3	6	<.1	<1	<1
DEC										
21...	4.0	.07	--	--	--	--	--	--	--	--
MAR , 1984										
16...	2.2	.04	--	--	--	--	--	--	--	--
APR										
27...	2.2	.09	1	<100	1	1	<1	.5	<1	<1
JUL										
04...	2.7	.05	--	--	--	--	--	--	--	--
AUG										
30...	3.1	.08	--	--	--	--	--	--	--	--

RIO MAUNABO BASIN

50090500 RIO MAUNABO AT LIZAS, PR

LOCATION.--Lat 18°01'38", long 65°56'24", Hydrologic Unit 21010005, on right bank, off Highway 759 at Lizas, about 1.0 mi (1.6 km) below Quebrada Coroco, and about 3.0 mi (4.8 km) northwest of Maunabo.

DRAINAGE AREA.--5.38 sq mi (13.93 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 230 ft (70.1 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--13 years (1972-84), 18.4 cu ft/s (0.521 cu m/s), 46.44 in/yr (1,180 mm/yr), 13,330 acre-ft/yr (16.4 cu hm/yr); median of yearly mean discharges, 15 cu ft/s (0.42 cu m/s), 10,900 acre-ft/yr (13 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,280 cu ft/s (178 cu m/s) Aug. 31, 1979, gage height, 14.57 ft (4.441 m), from rating curve extended above 50 cu ft/s (1.42 cu m/s) on basis of step-backwater analysis; minimum daily, 2.2 cu ft/s (0.062 cu m/s) Jul. 16, Aug. 7, 13, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 cu ft/s (17.0 cu m/s), and maximum (*):

		Discharge		Gage height				Discharge		Gage height	
Date	Time	(cu ft/s)	(cu m/s)	(ft)	(m)	Date	Time	(cu ft/s)	(cu m/s)	(ft)	(m)
Oct. 8	2145	618	17.5	6.77	2.063	June 10	0500	642	18.2	6.84	2.085
Dec. 2	0800	696	19.7	6.99	2.130	Sept. 19	1930	678	19.2	6.94	2.115
Feb. 15	2100	*883	25.0	7.47	2.277						

Minimum daily discharge, 3.8 cu ft/s (0.108 cu m/s) May 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	32	12	13	7.3	8.9	5.8	5.5	24	7.3	14	5.8
2	24	15	89	9.6	7.0	8.5	6.5	6.5	11	6.8	15	5.4
3	21	18	16	8.5	7.2	8.2	6.7	6.1	8.0	6.4	8.2	5.5
4	21	225	14	8.4	7.8	7.9	6.6	4.6	10	12	15	6.3
5	19	73	13	8.2	7.1	7.9	9.6	4.1	7.3	57	9.3	9.2
6	19	76	13	8.0	12	7.5	7.4	4.2	7.8	10	7.3	8.5
7	18	29	12	7.5	9.4	8.3	7.1	5.6	8.7	8.1	6.8	6.3
8	58	24	11	7.2	7.4	7.7	6.4	5.2	8.2	7.3	6.4	5.8
9	40	21	11	7.8	7.5	7.8	5.9	6.7	7.1	6.7	6.2	8.9
10	19	19	11	15	7.4	7.2	5.9	6.1	66	7.6	5.8	17
11	16	18	11	7.6	7.3	7.5	5.9	6.7	77	6.4	5.7	14
12	16	17	11	7.4	30	8.2	5.4	4.2	30	6.2	5.7	25
13	16	16	9.9	25	26	7.6	5.2	4.8	23	5.9	5.6	79
14	15	15	9.6	29	16	8.5	5.2	5.6	14	15	5.4	46
15	15	14	12	13	118	7.3	5.0	4.4	11	12	5.5	28
16	14	15	11	18	113	9.3	5.4	4.0	11	6.8	7.6	28
17	13	14	11	15	26	9.6	5.7	4.1	15	6.3	5.5	79
18	37	14	9.9	12	18	7.9	6.3	3.8	10	6.1	5.2	98
19	32	14	9.7	9.6	15	6.9	6.9	3.8	9.5	5.7	5.1	120
20	22	13	9.1	17	14	6.6	5.8	4.2	9.2	5.7	6.5	101
21	24	13	9.0	10	13	6.6	5.3	6.0	8.9	8.1	5.3	35
22	24	13	9.3	12	12	6.0	4.6	4.9	8.3	6.5	5.3	25
23	18	13	9.6	11	11	8.7	5.0	6.9	8.1	6.2	5.1	21
24	17	12	9.0	9.3	11	7.2	5.1	4.5	8.3	5.7	5.0	19
25	17	12	8.5	11	9.9	6.4	5.3	4.7	8.3	5.5	5.8	18
26	18	11	9.4	9.1	9.6	6.2	5.6	7.2	8.6	5.4	30	18
27	15	12	15	8.6	10	6.0	5.5	7.1	8.3	5.3	16	18
28	15	12	12	9.6	9.3	5.9	5.7	18	7.6	6.1	7.4	28
29	14	11	11	8.3	9.1	6.4	5.5	8.6	7.4	35	6.2	28
30	13	13	10	7.8	---	6.0	5.3	59	8.7	16	5.8	19
31	13	---	21	7.4	---	5.7	---	17	---	9.5	5.7	---
TOTAL	652	804	430.0	350.9	556.3	230.4	177.6	244.1	450.3	314.6	249.4	925.7
MEAN	21.0	26.8	13.9	11.3	19.2	7.43	5.92	7.87	15.0	10.1	8.05	30.9
MAX	58	225	89	29	118	9.6	9.6	59	77	57	30	120
MIN	13	11	8.5	7.2	7.0	5.7	4.6	3.8	7.1	5.3	5.0	5.4
CFSM	3.90	4.98	2.58	2.10	3.57	1.38	1.10	1.46	2.79	1.88	1.50	5.74
IN.	4.51	5.56	2.97	2.43	3.85	1.59	1.23	1.69	3.11	2.17	1.72	6.40
AC-FT	1290	1590	853	696	1100	457	352	484	893	624	495	1840

CAL YR 1983 TOTAL 6835.2 MEAN 18.7 MAX 225 MIN 2.6 CFSM 3.48 IN 47.23 AC-FT 13560
WTR YR 1984 TOTAL 5385.3 MEAN 14.7 MAX 225 MIN 3.8 CFSM 2.73 IN 37.23 AC-FT 10680

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RIO MAUNABO BASIN

50090500 RIO MAUNABO AT LIZAS, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEAR AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT, 12	1340	15	179	28.0
NOV, 16	1500	14	197	27.0
DEC, 13	1100	10	200	24.0
JAN, 17	1058	20	153	24.0
FEB, 15	1105	39	130	22.5
MAR, 12	1333	7.2	134	26.0
MAR, 27	1244	6.3	133	28.0
APR, 12	1235	5.6	188	26.5
MAY, 21	1615	4.3	185	27.0
JUN, 14	1107	14	157	27.0
AUG, 16	1432	6.2	161	30.0

RIO MAUNABO BASIN

50091000 RIO MAUNABO AT MAUNABO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'24", long 65°54'19", at bridge on Highway 3, 0.4 mi (0.6 km) southwest of Maunabo plaza, and 1.3 mi (2.1 km) upstream from mouth.

DRAINAGE AREA.--12.4 sq mi (32.1 sq km).

PERIOD OF RECORD.--Water years 1958-66, 1975 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
20...	1025	26	207	7.5	27.0	13	7.6	93	<10	5500	5800
DEC											
21...	1150	14	236	7.6	27.5	32	9.0	114	<10	600	310
MAR , 1984											
19...	1115	11	234	7.9	26.5	4.0	9.2	114	<10	K190	K1100
APR											
30...	1420	6.2	238	7.8	29.5	4.9	9.4	123	<10	K720	K1000
JUL											
06...	1310	17	193	7.4	30.0	7.1	7.5	99	<10	3000	610
AUG											
29...	1315	9.2	213	7.5	31.0	2.5	8.3	109	11	K1100	450

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
20...	65	0	16	5.2	18	1	1.2	70	9.7	16	.20
DEC											
21...	--	--	--	--	--	--	--	82	--	--	--
MAR , 1984											
19...	--	--	--	--	--	--	--	83	--	--	--
APR											
30...	77	0	18	7.8	22	1	.90	87	12	19	.20
JUL											
06...	--	--	--	--	--	--	--	62	--	--	--
AUG											
29...	65	0	15	6.6	18	1	1.0	72	9.4	19	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
20...	34	140	10	34	.37	.03	.40	.02	.78	.80	1.2
DEC											
21...	--	--	--	8	--	<.01	.30	<.01	--	14	14
MAR , 1984											
19...	--	--	--	6	--	<.01	.20	.12	.48	.60	.80
APR											
30...	39	170	2.9	6	--	<.01	.20	<.01	--	.50	.70
JUL											
06...	--	--	--	15	--	<.01	.30	<.01	--	.20	.50
AUG											
29...	35	150	3.7	6	--	<.01	.10	.05	.17	.20	.30

K = non-ideal count

50091000 RIO MAUNABO AT MAUNABO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
20...	5.3	.09	1	<100	1	8	3	<.1	<1	<1
DEC										
21...	63	.06	--	--	--	--	--	--	--	--
MAR , 1984										
19...	3.5	.12	--	--	--	--	--	--	--	--
APR										
30...	3.1	.35	1	<100	1	1	5	<.1	<1	<1
JUL										
06...	2.2	.11	--	--	--	--	--	--	--	--
AUG										
29...	1.3	.04	--	--	--	--	--	--	--	--

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RIO CHICO BASIN

50091800 RIO CHICO AT PROVIDENCIA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 17°59'16", long 66°00'18", at flat low bridge 200 ft (61 m) south of Highway 3, 0.5 mi (0.8 km) above mouth, and 1.5 mi (2.4 km) southeast of Patillas plaza.

DRAINAGE AREA.--4.9 sq mi (12.8 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983 20...	1230	4.9	414	7.6	28.0	2.8	4.8	61	26	5700	9100
DEC 21...	1000	1.6	637	7.4	25.5	7.3	1.0	12	48	2400000	51000
MAR , 1984 19...	0945	.65	667	7.5	25.0	7.9	.0	0	150	4200000	870000
APR 30...	1145	.50	722	7.3	29.0	8.4	.0	0	170	K6.6 E07	410000
JUL 06...	1040	6.7	374	7.5	26.0	6.6	6.4	79	18	300000	52000
AUG 29...	1045	.47	874	7.2	29.0	1.5	.0	0	140	4500000	K1700000

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983 20...	110	0	26	12	44	2	1.9	142	23	32	.20
DEC 21...	--	--	--	--	--	--	--	207	--	--	--
MAR , 1984 19...	--	--	--	--	--	--	--	216	--	--	--
APR 30...	130	0	30	13	70	3	7.7	223	49	61	.10
JUL 06...	--	--	--	--	--	--	--	114	--	--	--
AUG 29...	150	0	35	14	110	4	6.9	216	75	96	.30

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983 20...	31	260	3.4	5	.28	.02	.30	2.0	1.7	3.7	4.0
DEC 21...	--	--	--	9	.30	.80	1.1	5.9	5.1	11	12
MAR , 1984 19...	--	--	--	9	--	.04	<.10	17	5.0	22	--
APR 30...	35	400	.52	10	.05	.05	.10	21	14	35	35
JUL 06...	--	--	--	10	.35	.25	.60	1.7	1.7	3.4	4.0
AUG 29...	37	500	.61	66	--	.02	<.10	16	5.0	21	--

K = non-ideal count
6.6 E07 = 66,000,000

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RIO CHICO BASIN

50091800 RIO CHICO AT PROVIDENCIA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
20...	19	.59	1	<100	1	23	1	<.1	<1	1
DEC										
21...	54	.18	--	--	--	--	--	--	--	--
MAR , 1984										
19...	--	4.9	--	--	--	--	--	--	--	--
APR										
30...	160	5.2	1	100	1	7	3	.6	<1	2
JUL										
06...	19	.52	--	--	--	--	--	--	--	--
AUG										
29...	--	4.3	--	--	--	--	--	--	--	--

RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR

LOCATION.--Lat 18°02'04", long 66°01'58", Hydrologic Unit 21010004, on left bank, at foot bridge, off Highway 184, 1.2 mi (1.9 km) upstream from Lago Patillas Dam and 2.2 mi (3.5 km) northwest of Patillas.

DRAINAGE.--18.3 sq mi (47.4 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to October 1965 (annual low-flow and occasional measurements only), January 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 235 ft (71.6 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--18 years (1967-84), 59.9 cu ft/s (1.696 cu m/s), 44.45 in/yr (1,129 mm/yr), 43,400 acre-ft/yr (53.5 cu hm/yr); median of yearly mean discharges, 56 cu ft/s (1.59 cu m/s), 40,600 acre-ft/yr (50 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 cu ft/s (419 cu m/s) Sept. 16, 1975, gage height, 12.45 ft (3.795 m), from rating curve extended above 250 cu ft/s (7.08 cu m/s) on basis of slope-area measurement of peak flow; minimum, 4.6 cu ft/s (0.130 cu m/s) May 13-16, 1968, gage height, 3.55 ft (1.082 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 cu ft/s (70.8 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 5	1930	5,930	168	11.09	3.380	June 10	0615	3,970	112	9.75	2.972
Feb. 15	2100	*6,230	176	11.27	3.435	Sept. 17	1445	4,750	134	10.32	3.146

Minimum discharge, 8.2 cu ft/s (0.232 cu m/s) May 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	27	27	39	20	26	13	12	37	31	36	28
2	49	26	76	30	20	26	13	11	28	25	34	26
3	44	32	30	29	21	26	13	11	22	16	30	22
4	41	394	25	29	32	24	13	10	24	145	45	23
5	38	425	22	29	26	23	15	9.0	22	448	42	31
6	34	179	23	30	26	23	16	10	51	67	32	36
7	35	94	23	29	25	23	15	11	88	45	32	24
8	41	65	22	28	21	23	13	9.8	48	37	30	21
9	56	51	21	29	20	24	13	11	35	33	30	21
10	41	43	20	34	23	23	14	13	504	31	29	41
11	36	41	21	26	23	20	17	11	72	33	27	45
12	37	38	20	25	94	19	17	9.6	53	32	26	62
13	60	35	19	85	112	19	16	11	55	34	25	71
14	47	33	18	144	60	33	15	11	37	65	25	77
15	44	34	21	85	436	23	14	11	27	59	26	68
16	41	33	24	71	252	21	15	11	25	47	32	78
17	34	31	21	76	74	21	15	10	31	41	26	512
18	37	30	24	62	61	19	14	10	23	38	23	465
19	43	29	20	53	52	18	13	12	20	34	23	358
20	55	29	20	76	44	19	14	11	20	34	25	485
21	33	27	21	62	38	21	14	12	19	35	22	330
22	32	27	23	59	36	21	14	15	16	37	22	125
23	30	27	24	43	34	28	13	20	14	36	22	96
24	29	27	24	41	33	20	12	15	14	33	21	72
25	29	26	23	40	31	16	12	19	15	31	20	63
26	31	26	22	35	29	15	11	38	15	33	44	54
27	27	27	29	32	29	14	14	40	14	33	55	49
28	26	26	26	30	29	14	17	33	12	30	32	50
29	38	26	23	27	27	14	12	25	13	57	27	47
30	34	28	32	25	---	14	12	141	16	60	30	47
31	30	---	50	23	---	13	---	46	---	39	37	---
TOTAL	1192	1935	794	1426	1718	643	419	619.4	1370	1722	930	3425
MEAN	38.5	64.5	25.6	46.0	59.2	20.7	14.0	20.0	45.7	55.5	30.0	114
MAX	60	425	76	144	436	33	17	141	504	448	55	512
MIN	26	26	18	23	20	13	11	9.0	12	16	20	21
CFSM	2.10	3.53	1.40	2.51	3.24	1.13	.77	1.09	2.50	3.03	1.64	6.23
IN.	2.42	3.93	1.61	2.90	3.49	1.31	.85	1.26	2.78	3.50	1.89	6.96
AC-FT	2360	3840	1570	2830	3410	1280	831	1230	2720	3420	1840	6790

CAL YR 1983 TOTAL 21535.0 MEAN 59.0 MAX 1030 MIN 10 CFSM 3.22 IN 43.77 AC-FT 42710
WTR YR 1984 TOTAL 16193.4 MEAN 44.2 MAX 512 MIN 9.0 CFSM 2.42 IN 32.92 AC-FT 32120

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50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT , 1983											
06...	1140	36	164	8.1	26.5	1.1	8.2	102	450	690	48
FEB , 1984											
01...	1400	19	157	7.8	23.5	1.0	9.0	107	K860	K1800	52
JUN											
06...	1300	48	89	7.3	26.5	33	8.4	105	2300	K15000	23
AUG											
03...	1230	30	134	7.7	27.0	1.6	8.0	101	K910	K1200	40

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT , 1983											
06...	0	11	5.0	13	.8	.40	51	9.3	11	.10	26
FEB , 1984											
01...	0	12	5.4	14	.9	.40	53	11	11	<.10	23
JUN											
06...	2	5.2	2.4	7.7	.7	.40	21	7.3	8.6	<.10	12
AUG											
03...	0	9.4	4.1	11	.8	.40	41	9.8	10	<.10	21

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)
OCT , 1983										
06...	102	110	9.9	.12	.03	.04	.4	.02	.02	.01
FEB , 1984										
01...	117	110	6.0	<.10	<.01	--	1.0	<.01	<.01	<.01
JUN										
06...	63	57	8.2	<.10	.03	.04	.3	.08	.05	.04
AUG										
03...	99	90	7.8	<.10	.02	.03	.2	.02	<.01	.01

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT , 1983										
06...	.03	10	1	21	<.5	<1	<1	<3	1	36
FEB , 1984										
01...	--	20	<1	24	<.5	<1	<1	<3	1	19
JUN										
06...	.12	50	1	11	<.0	<1	<1	<3	3	100
AUG										
03...	.03	10	1	13	1	<1	3	<3	<1	42

K = non-ideal count

RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)
OCT , 1983										
06...	1	<4	9	.1	<10	2	<1	<1	37	7
FEB , 1984										
01...	1	<4	32	<.1	<10	1	<1	<1	44	<6
JUN										
06...	2	<4	6	.2	<10	3	<1	<1	19	<6
AUG										
03...	<1	<4	5	<.1	<10	<1	<1	<1	33	<6

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
NOV, 16	1131	34	163	25.5	MAR, 27	1520	14	163	28.0
DEC, 05	1235	22	175	25.0	APR, 11	1044	17	161	25.5
JAN, 20	1105	90	120	23.0	MAY, 14	1234	11	165	27.0
MAR, 21	1155	21	159	25.5					

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT , 1983				
06...	1140	36	7	96
FEB , 1984				
01...	1400	19	7	100
JUN				
06...	1300	48	40	100
AUG				
03...	1230	30	72	100

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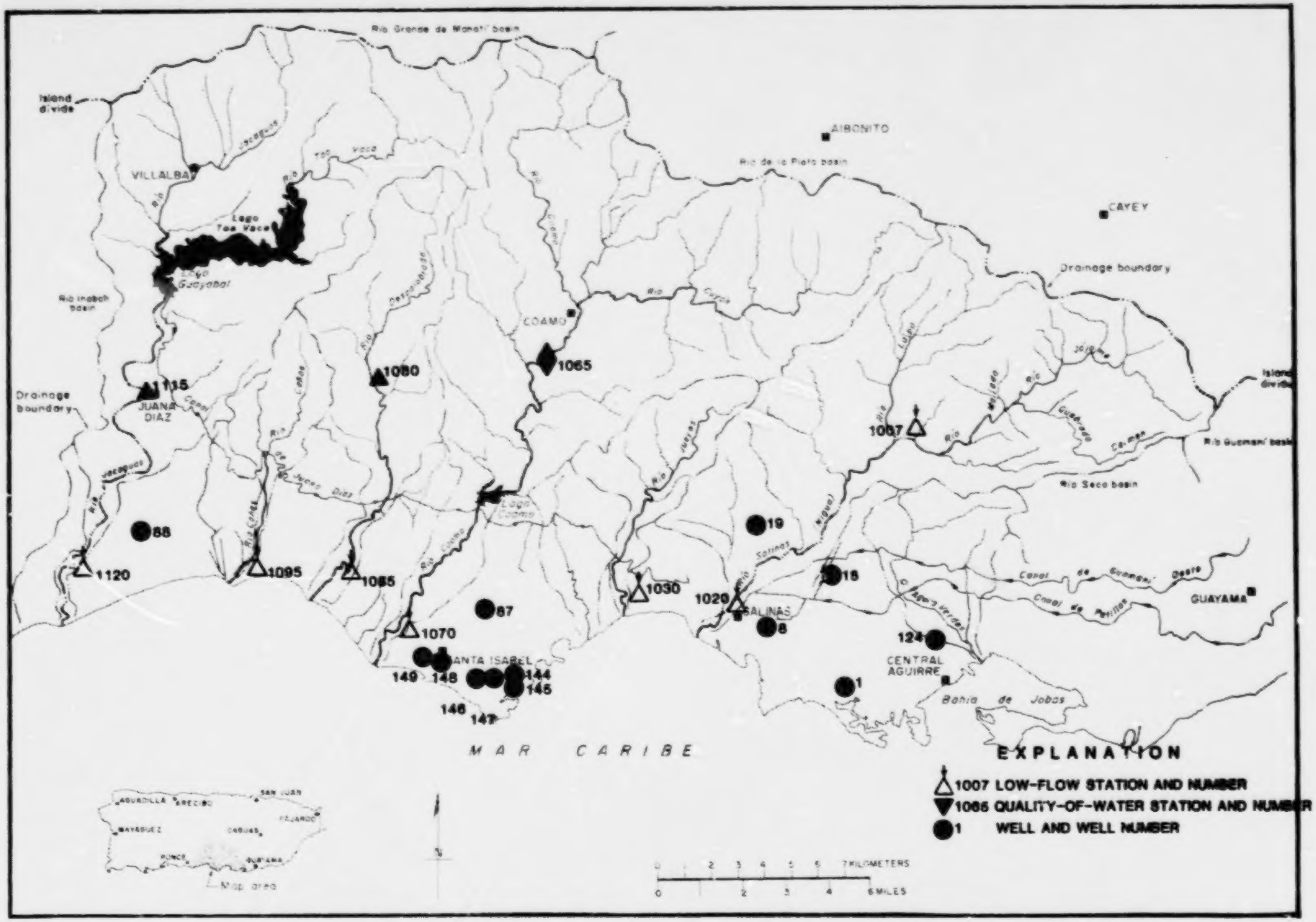
Río Grande de Manatí basin
Island divide
VILLALBA
Río Jacaguas
Río Toa Vaca
Lago Toa Vaca
Lago Guayabal
Río Inabón basin
Río Descalabrado
Río Coamo
AIBONITO
Río de la Plata basin
CAYEY
Drainage boundary
COAMO
Río Cuyón
1065
1080
1115
JUANA DIAZ
Canal de Juana Díaz
Río Cañas
Río Jueyes
Río Lapa
Río Majada
Río Jájome
Río Guamaní
Río Guamaní basin
Río Seco basin
Island divide
Drainage boundary
1007
88
19
Río Salinas
Río Nigua
16
1120
1095
1085
1030
1020
SALINAS
Canal de Guamaní Oeste
Canal de Patillas
GUAYAMA
87
8
124
1070
SANTA ISABEL
CENTRAL AGUIRRE
Lago Coamo
149
148
144
145
146
147
1
Bahía de Jobos
MAR CARIBE
EXPLANATION
1007 LOW-FLOW STATION AND NUMBER
1065 QUALITY-OF-WATER STATION AND NUMBER
1 WELL AND WELL NUMBER
AGUADILLA
ARECIBO
SAN JUAN
FAJARDO
MAYAGÜEZ
CAGUAS
PONCE
GUAYAMA
Map area
0 1 2 3 4 5 6 7 KILOMETERS
0 1 2 3 4 6 MILES

Figure 20.--South coast river basins--Río Salinas to Río Jacaguas basins.

RIO COAMO BASIN

50106500 RIO COAMO NEAR COAMO, PR

LOCATION.--Lat 18°05'52", long 66°22'10", Hydrologic Unit 21010004, on Highway 153 bridge, 0.4 mi (0.6 km) above Río de la Mina, and 1.75 mi (2.8 km) south of Coamo plaza.

DRAINAGE AREA.--46.0 sq mi (119.1 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1959-61 (annual low-flow measurements only), September 1960 (indirect flood measurement only), 1965-67 (annual maximum discharge only), January 1967 to December 1968, January to December 1969 (high-water discharges only), January to December 1970, (annual maximum discharge and occasional measurements only). February to September, 1984.

GAGE.--Water-stage recorder. Altitude of gage is 260 ft (79.0 m), from topographic map.

REMARKS.--Records fair. Diversion to Coamo water treatment plant, for municipal supply, upstream from station. Some diurnal fluctuation from return flow from Coamo sewage treatment plant.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 cu ft/s (623 cu m/s) Oct. 9, 1970, gage height, 21.4 ft (6.523 m), from floodmark, on basis of contracted-opening measurement of peak flow; minimum, 1.3 cu ft/s (0.037 cu m/s) Apr. 10, 11, 1968.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 1,000 cu ft/s (28.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 2	1715	*1,790	50.7	5.66	1.725	Sept. 20	1500	1,460	41.3	5.26	1.603
Sept. 18	2000	1,450	41.1	5.24	1.597	Sept. 28	1530	1,420	40.2	5.21	1.588

Minimum discharge, 2.4 cu ft/s (0.068 cu m/s) Aug. 24, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					---	4.5	7.5	4.2	5.2	4.2	4.7	18
2					---	4.2	6.6	4.2	9.0	4.2	4.4	113
3					---	4.2	5.8	4.1	5.7	4.2	4.1	31
4					---	4.3	5.2	4.1	5.2	4.3	4.5	33
5					---	4.0	4.9	4.4	7.1	46	4.7	33
6					---	4.0	4.9	4.2	14	18	4.5	23
7					---	4.0	4.3	4.2	9.7	9.5	4.4	9.1
8					---	4.1	4.1	4.0	9.6	6.8	4.3	6.3
9					---	4.4	4.1	4.2	7.7	5.9	4.0	5.5
10					---	4.7	4.3	4.2	9.8	5.5	3.9	5.2
11					---	4.4	4.6	4.4	7.6	5.3	4.1	21
12					---	4.4	4.2	4.4	6.0	4.9	4.4	25
13					---	3.8	4.0	5.4	5.2	4.7	4.4	23
14					---	4.0	3.8	4.9	4.9	5.3	4.1	15
15					---	4.0	3.6	10	4.1	4.9	22	11
16					---	4.0	4.1	5.7	4.2	4.9	5.2	23
17					---	4.1	3.5	5.5	4.3	4.5	3.6	28
18					---	3.9	3.4	4.9	4.4	4.6	3.5	159
19					---	3.9	3.2	4.9	5.5	4.4	3.5	185
20					---	4.0	3.5	5.1	6.4	4.1	3.3	509
21					---	3.9	3.5	4.9	5.3	4.2	3.0	226
22					---	5.3	3.4	4.7	14	4.2	3.0	78
23					---	5.6	3.5	4.6	7.2	4.0	2.8	44
24					5.5	4.4	3.5	4.4	5.4	3.8	2.8	33
25					5.3	4.0	3.4	4.5	5.1	3.7	2.9	25
26					5.1	4.5	5.2	4.2	4.3	3.9	7.1	22
27					4.9	4.6	11	4.0	4.3	4.0	7.0	20
28					4.6	4.7	9.1	4.1	4.5	4.3	3.4	100
29					4.8	5.3	5.5	4.0	4.4	4.0	3.3	39
30					---	5.1	4.6	5.5	4.3	4.0	3.4	22
31					---	7.1	---	7.0	---	4.3	22	---
TOTAL					---	137.2	142.3	148.9	194.4	200.5	162.3	1890.1
MEAN					---	4.43	4.74	4.80	6.48	6.47	5.24	63.0
MAX					---	7.1	11	10	14	46	22	509
MIN					---	3.8	3.2	4.0	4.1	3.7	2.8	5.2
CFSM					---	.10	.10	.10	.14	.14	.11	1.37
IN.					---	.11	.12	.12	.16	.16	.13	1.53
AC-FT					---	272	282	295	386	398	322	3750

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50106500 RIO COAMO NEAR COAMO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER-QUALITY RECORDS, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983 17...	1200	15	685	8.0	23.0	11	6.6	85	16	K13000	K16000
DEC 12...	1155	11	562	9.1	26.0	2.1	7.6	92	10	300	400
MAR , 1984 02...	1655	4.1	699	8.3	31.0	1.8	8.6	117	10	K140	300
APR 27...	1500	8.7	537	8.1	28.5	7.3	6.3	82	19	K3400	4200
JUN 25...	1405	5.4	656	8.2	32.0	2.6	8.2	113	25	K670	270
AUG 21...	1615	2.9	731	9.0	32.5	.60	5.5	77	30	K15000	750

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983 17...	190	9	50	15	26	.9	3.0	178	27	30	.20
DEC 12...	--	--	--	--	--	--	--	248	--	--	--
MAR , 1984 02...	--	--	--	--	--	--	--	257	--	--	--
APR 27...	230	0	58	20	41	1	4.5	232	39	49	.20
JUN 25...	--	--	--	--	--	--	--	226	--	--	--
AUG 21...	260	0	68	21	42	1	4.9	271	29	50	.20

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983 17...	28	290	12	19	1.8	.08	1.9	.70	.70	1.4	3.3
DEC 12...	--	--	--	12	2.8	.26	3.1	.66	.34	1.0	4.1
MAR , 1984 02...	--	--	--	6	3.2	.48	3.7	.82	.58	1.4	5.1
APR 27...	29	380	9.2	2	1.7	.39	2.1	1.3	1.1	2.4	4.5
JUN 25...	--	--	--	6	2.2	.19	2.4	.31	1.4	1.7	4.1
AUG 21...	32	410	3.2	8	1.8	.33	2.1	1.5	.40	1.9	4.0

K = non-ideal count

50106500 RIO COAMO NEAR COAMO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
17...	15	.55	1	<100	1	3	1	<.1	<1	2
DEC										
12...	18	.82	--	--	--	--	--	--	--	--
MAR , 1984										
02...	23	1.2	--	--	--	--	--	--	--	--
APR										
27...	20	.92	2	<100	1	2	2	.3	<1	<1
JUN										
25...	19	.98	--	--	--	--	--	--	--	--
AUG										
21...	19	1.2	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
NOV, 16	1005	29	560	25.5	MAY, 16	1052	5.6	651	26.5
APR, 05	0924	6.9	697	24.5	JUN, 11	1328	7.5	557	29.0

RIO DESCALABRADO BASIN

50108000 RIO DESCALABRADO NEAR LOS LLANOS, PR

LOCATION.--Lat 18°03'08", long 66°25'34", Hydrologic Unit 21010004, at bridge on Highway 14, 1.5 mi (2.4 km) west of Los Llanos, and 5.3 mi (8.5 km) east of Juana Díaz.

DRAINAGE AREA.--12.9 sq mi (33.4 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1959-65 (annual low-flow measurements only), 1965 (annual maximum discharge), January 1966 to June 1969, July to December (maximum discharge only), February to September 1984.

GAGE.--Water-stage recorder. Altitude of gage is 220 ft (67.0 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 cu ft/s (198 cu m/s) May 21, 1969, gage height 11.5 ft (3.505 m), from rating curve extended above 250 cu ft/s (7.080 cu m/s) on basis of slope-area measurements of peak flow; no flow many days.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 700 cu ft/s (17.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Aug. 31	1445	781	22.1	6.16	1.878	Sept. 18	1945	1,560	44.2	7.64	2.329
Sept. 10	1815	*2,220	62.9	8.68	2.646	Sept. 20	0500	2,110	59.8	8.52	2.188
Sept. 12	1530	757	21.4	6.11	1.862	Sept. 28	1545	1,300	36.8	7.18	2.188

Minimum discharge, 0.24 cu ft/s (0.007 cu m/s) Mar. 12-15, Apr. 18, 19, 23, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					---	.37	.41	.58	.54	.48	.36	6.9
2					---	.36	.37	.58	1.0	.48	.36	39
3					---	.32	.36	.57	.55	.48	.36	6.1
4					---	.31	.36	.57	.51	.49	.38	1.6
5					---	.32	.39	.58	.50	8.2	.36	13
6					---	.31	.38	.61	.52	.72	.36	3.4
7					---	.31	.38	.63	.54	.53	.38	1.9
8					---	.31	.37	.62	.52	.52	.37	1.3
9					---	.34	.35	.58	.48	.53	.36	1.2
10					---	.35	.37	.58	7.8	.57	.35	79
11					---	.32	.39	.56	.73	.57	.36	20
12					---	.30	.37	.58	.55	.53	.40	40
13					---	.28	.39	.95	.51	.52	.35	4.5
14					---	.28	.37	.66	.48	.54	.35	3.1
15					---	.29	.32	3.9	.47	.55	.36	2.1
16					---	.32	.32	1.2	.46	.53	.35	25
17					.58	.36	.31	.52	.51	.54	.34	37
18					.61	.33	.29	.49	.53	2.5	.33	127
19					.57	.35	.28	.48	.51	.60	.32	32
20					.54	.37	.30	.48	.49	.51	.32	226
21					.53	.41	.31	.52	.48	.52	.31	40
22					.46	.36	.30	.55	.48	.57	.30	20
23					.43	.39	.28	.52	.47	.52	.31	10
24					.42	.39	.28	4.5	.46	.46	.30	8.0
25					.41	.40	.30	.73	.45	.41	.32	6.5
26					.40	.41	4.4	1.1	.44	.41	.37	5.5
27					.40	.39	1.2	.50	.43	.42	.37	5.0
28					.40	.37	.65	.67	.44	.41	.36	50
29					.38	.41	.56	.59	.48	.41	.36	10
30					---	.44	.56	.71	.48	.37	.45	5.0
31					---	.44	---	.59	---	.35	53	---
TOTAL					---	10.91	15.92	26.80	22.81	25.24	63.57	830.1
MEAN					---	.35	.53	.86	.76	.81	2.05	27.7
MAX					---	.44	4.4	4.5	7.8	8.2	53	226
MIN					---	.28	.28	.48	.43	.35	.30	1.2
CFSM					---	.03	.04	.07	.06	.06	.16	2.15
IN.					---	.03	.05	.08	.07	.07	.18	2.39
AC-FT					---	22	32	53	45	50	126	1650

WATER QUALITY RECORDS

PERIOD OF RECORDS.--APRIL TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
APR, 15	1137	.40	808	26.0	JUN, 11	1222	.71	557	30.0
MAY, 16	1240	.73	528	27.0	AUG, 01	0855	.37	933	25.0

RIO JACAGUAS BASIN

50111500 RIO JACAGUAS AT JUANA DIAZ, PR

LOCATION.--Lat 18°03'16", long 66°30'40", Hydrologic Unit 21010004, on Highway 14 bridge, 0.4 mi (0.6 km) west of Juana Díaz plaza, and 4.0 mi (6.4 km) downstream from Lago Guayabal.

DRAINAGE AREA.--49.8 sq mi (129.0 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1984

GAGE.--Water-stage recorder. Altitude of gage is 131 ft (40.0 m), from topographic map.

REMARKS.--Records fair. Flow regulation from Lago Guayabal.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 300 cu ft/s (8.50 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 20	0630	342	9.68	8.06	2.457	Sept. 21	1830	*357	10.1	8.09	2.466

Minimum discharge, 0.91 cu ft/s (0.026 cu m/s) May 14, 15, July 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	6.3	4.9	4.1	2.2	2.2	7.4
2						---	5.9	5.0	5.1	1.9	2.2	5.5
3						---	5.6	5.0	3.1	1.8	2.2	5.1
4						---	5.3	5.0	2.1	1.8	3.4	4.4
5						---	5.3	4.2	1.5	5.5	5.2	10
6						---	5.3	2.9	1.3	4.4	5.6	7.3
7						---	5.4	2.6	1.6	3.8	6.7	6.1
8						---	5.3	2.2	1.6	3.0	7.4	6.2
9						---	4.3	1.9	1.7	2.2	7.7	5.7
10						---	2.9	1.8	6.0	2.3	8.2	5.2
11						---	3.3	1.7	3.2	3.1	8.3	5.3
12						---	4.9	1.5	2.7	3.0	8.5	5.2
13						---	5.1	1.7	2.4	2.6	7.4	5.5
14						4.9	4.9	1.9	2.4	2.6	6.2	5.9
15						5.2	4.3	1.7	2.3	2.6	6.2	5.0
16						5.2	4.6	2.1	2.2	2.4	7.1	4.9
17						6.0	4.3	2.1	2.4	1.5	6.2	5.0
18						5.5	4.3	1.2	2.5	1.9	5.9	17
19						5.5	3.6	1.5	2.3	3.0	5.8	28
20						5.7	2.8	1.4	2.2	3.6	5.9	68
21						5.8	2.4	1.3	2.2	4.2	6.6	218
22						6.0	2.5	1.5	2.3	4.5	6.4	196
23						6.9	2.3	1.6	2.8	4.4	7.0	122
24						7.0	2.1	1.8	3.5	4.7	7.0	83
25						6.8	3.1	4.8	3.4	4.9	6.9	73
26						5.9	6.0	4.0	3.3	4.9	6.6	66
27						5.1	8.2	5.6	3.2	4.9	6.7	65
28						4.8	5.6	2.6	2.8	3.5	5.8	85
29						5.7	4.7	2.3	2.8	3.1	5.3	103
30						5.7	4.8	2.6	2.6	2.8	6.2	77
31						5.7	---	2.8	---	2.4	13	---
TOTAL						---	135.4	83.2	81.6	99.5	195.8	1300.7
MEAN						---	4.51	2.68	2.72	3.21	6.32	43.4
MAX						---	8.2	5.6	6.0	5.5	13	218
MIN						---	2.1	1.2	1.3	1.5	2.2	4.4
CFSM						---	.09	.05	.06	.06	.13	.87
IN.						---	.10	.06	.06	.07	.15	.97
AC-FT						---	269	165	162	197	388	2580

WATER QUALITY RECORDS

PERIOD OF RECORD.--APRIL TO SEPTEMBER 1984

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
APR, 05	1507	5.5	357	29.5	JUN, 12	1005	2.8	374	28.0
MAY, 22	1047	1.6	357	29.0	AUG, 01	1140	2.2	345	30.0

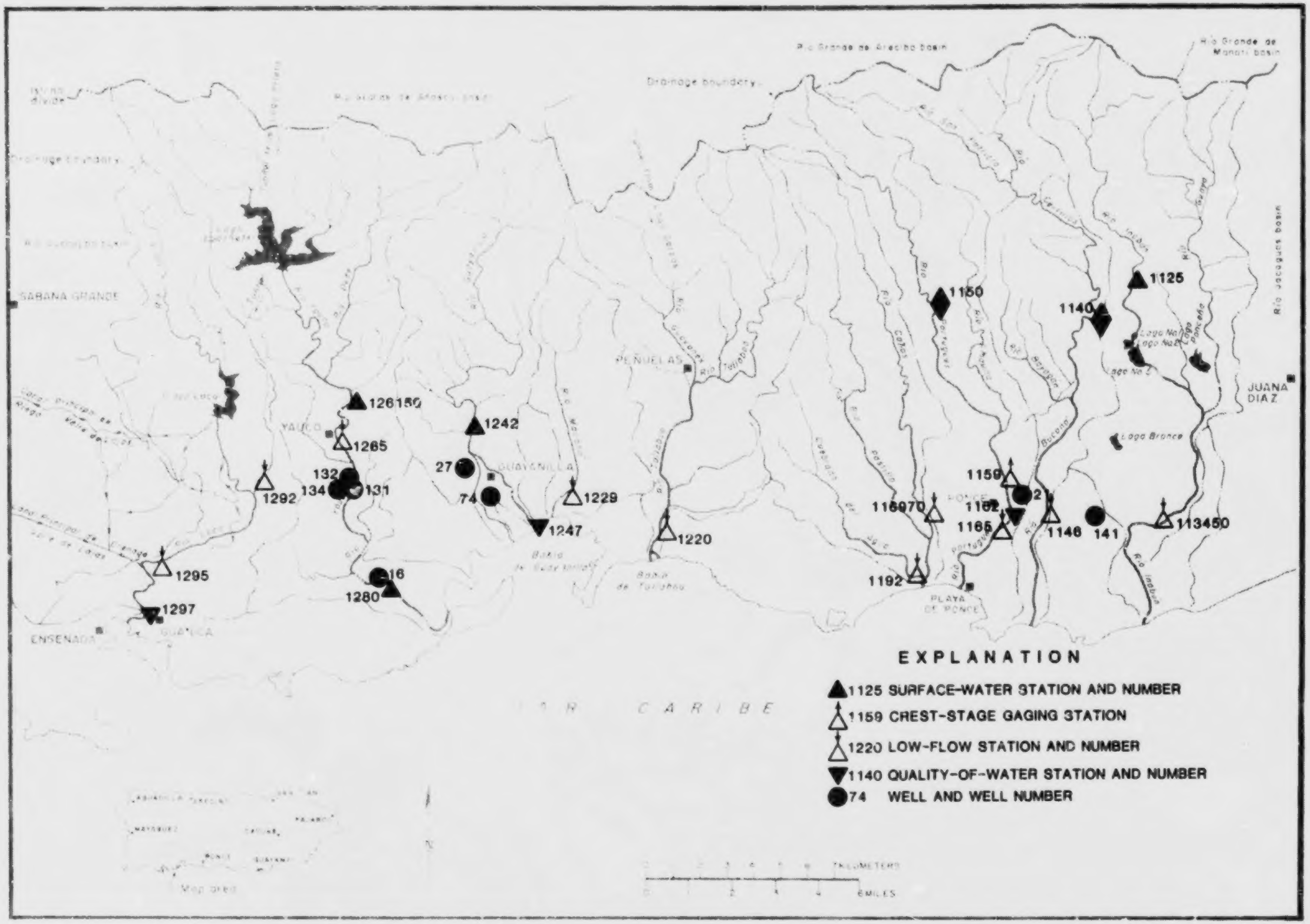
Río Grande de Arecibo basin
Río Grande de Manatí basin
Drainage boundary
Drainage boundary
SABANA GRANDE
YAUCO
GUAYANILLA
PEÑUELAS
PONCE
PLAYA DE PONCE
JUANA DIAZ
ENSENADA
GUANICA
Bahía de Guayanilla
Bahía de Tallaboa
MAR CARIBE
Río Jacaguas basin
Río Inabón
Río Bucaná
Río Tallaboa
Río Guayanilla
Lago Bronce
1125
1140
1150
126150
1265
1242
1229
1247
1220
1292
1295
1297
1280
16
27
74
132
134
131
1159
1162
1165
115970
1146
141
113450
1192
2
EXPLANATION
1125 SURFACE-WATER STATION AND NUMBER
1159 CREST-STAGE GAGING STATION
1220 LOW-FLOW STATION AND NUMBER
1140 QUALITY-OF-WATER STATION AND NUMBER
74 WELL AND WELL NUMBER
KILOMETERS
MILES
Map area

Figure 21.--South coast river basins--Río Inabón to Río Loco basins.

RIO INABON BASIN

50112500 RIO INABON AT REAL ABAJO, PR

LOCATION.--Lat 18°05'10", long 66°33'46", Hydrologic Unit 21010004, at bridge on private road, off Highway 511 at Hacienda La Concordia, 0.4 mi (0.6 km) upstream from diversion canal, 0.5 mi (0.8 km) north of Real Abajo, and 6.1 mi (9.8 km) northeast of Plaza Degetau in Ponce.

DRAINAGE AREA.--9.70 sq mi (25.12 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1962-63 (annual low-flow measurements only), February to June 1964 (monthly measurements only), July 1964 to July 1970, April 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 410 ft (125 m), from topographic map. Prior to April 1971 nonrecording gage and crest-stage gage at different datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--18 years (1965-69, 1972-84), 18.4 cu ft/s (0.521 cu m/s), 25.76 in/yr (654 mm/yr), 13,330 acre-ft/yr (16.4 cu hm/yr); median of yearly mean discharges, 17 cu ft/s (0.48 cu m/s), 12,300 acre-ft/yr (15 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,720 cu ft/s (162 cu m/s) Oct. 9, 1970, gage height, 20.6 ft (6.279 m), datum then in use, from floodmark, from rating curve extended above 30 cu ft/s (0.850 cu m/s) on basis of contracted opening and flow-over-road measurements of peak flow; minimum daily, 0.80 cu ft/s (0.023 cu m/s) July 23, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 cu ft/s (14.2 cu m/s), and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 11	1700	*786	22.3	9.05	2.758	Nov. 7	1530	727	20.6	8.55	2.606
Oct. 22	1600	690	19.5	8.23	2.509	July 18	1615	622	17.6	7.64	2.329
Nov. 5	2000	686	19.4	8.20	2.499	Sept. 2	1545	739	20.9	8.65	2.637

Minimum daily discharge, 2.1 cu ft/s (0.059 cu m/s) Mar. 10, Apr. 9, May 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	11	14	7.1	5.0	3.0	2.7	2.7	20	7.0	7.1	14
2	2.5	9.1	13	5.4	4.8	3.2	2.3	2.7	28	7.4	7.6	80
3	4.2	14	11	5.2	4.1	3.5	2.4	2.6	17	7.4	6.3	55
4	10	116	8.9	6.2	6.4	4.2	7.4	2.8	11	10	6.0	29
5	11	107	8.1	9.2	7.2	4.2	5.8	3.3	30	54	6.3	26
6	4.8	84	8.0	8.2	5.7	3.2	3.4	2.9	27	16	6.1	28
7	3.6	123	7.4	9.3	5.8	2.8	2.5	2.6	17	9.6	5.4	19
8	32	95	7.2	26	7.1	2.6	2.2	2.4	17	7.7	5.2	13
9	23	63	7.3	20	11	3.5	2.1	2.1	12	7.3	4.7	9.9
10	46	54	7.6	9.5	8.9	2.1	2.5	2.4	20	6.8	4.3	22
11	96	46	8.3	6.4	8.7	2.2	24	2.7	20	7.8	4.1	18
12	62	36	7.6	5.2	7.0	2.3	5.5	2.5	18	6.8	4.7	27
13	34	28	6.9	4.8	6.1	2.4	2.7	5.4	12	5.9	6.3	48
14	24	25	6.7	5.4	5.3	2.4	33	5.0	8.7	6.8	4.3	37
15	23	21	6.8	4.3	4.9	2.7	15	14	6.4	9.0	10	24
16	49	19	6.8	4.1	5.9	3.0	5.5	21	22	6.0	11	15
17	61	18	6.6	4.0	4.5	8.1	4.7	4.2	33	5.3	5.9	47
18	45	16	6.8	3.5	3.8	3.9	4.0	3.2	35	40	4.7	104
19	29	16	5.8	3.2	3.4	3.0	3.7	3.1	24	24	4.1	99
20	31	17	25	3.0	3.0	15	3.5	2.9	17	12	4.0	129
21	56	17	23	2.6	3.0	9.5	3.3	18	11	8.6	3.7	84
22	98	16	10	2.5	2.8	3.7	3.3	36	8.8	7.5	3.2	61
23	59	15	8.6	2.6	2.7	5.1	2.6	19	6.7	6.7	3.5	38
24	36	16	8.0	2.5	2.8	4.8	2.5	40	8.3	6.7	3.2	30
25	27	14	7.4	3.1	3.5	4.1	2.9	30	9.9	5.8	3.2	26
26	22	12	8.3	3.8	4.0	4.4	10	20	7.7	6.6	20	22
27	18	12	10	3.6	3.5	3.9	12	10	7.3	6.3	15	23
28	15	11	7.3	3.9	3.5	3.6	4.0	32	6.8	17	6.0	25
29	23	10	7.3	4.1	3.2	3.6	2.9	24	6.7	13	4.5	21
30	19	14	7.3	4.9	---	3.1	2.9	25	6.8	8.5	9.0	21
31	14	---	7.3	5.2	---	2.5	---	20	---	7.5	14	---
TOTAL	982.0	1053.1	284.3	188.8	147.6	125.5	180.5	364.5	475.1	351.1	203.4	1197.9
MEAN	31.7	35.1	9.17	6.09	5.09	4.05	6.03	11.8	15.8	11.3	6.56	39.9
MAX	98	123	25	26	11	15	33	40	35	54	20	129
MIN	2.5	9.1	5.8	2.5	2.7	2.1	2.1	2.1	6.4	5.3	3.2	9.9
CFSM	3.27	3.62	.95	.63	.53	.42	.62	1.22	1.63	1.17	.68	4.11
IN.	3.77	4.04	1.09	.72	.57	.48	.69	1.40	1.82	1.35	.78	4.59
AC-FT	1950	2090	564	374	293	249	359	723	942	696	403	2380

CAL YR 1983 TOTAL 5385.7 MEAN 14.8 MAX 126 MIN 1.4 CFSM 1.53 IN 20.65 AC-FT 10680
WTR YR 1984 TOTAL 5554.1 MEAN 15.2 MAX 129 MIN 2.1 CFSM 1.57 IN 21.30 AC-FT 11020

50112500 RIO INABON AT REAL ABAJO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1931 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT, 25	0945	28	221	24.0	FEB, 24	1206	3.0	276	23.0
NOV, 23	0850	12	302	22.0	MAR, 22	0918	3.9	265	23.0
DEC, 28	1143	7.4	258	24.5	APR, 27	1010	11.0	242	24.5
JAN, 26	1237	4.5	260	24.0	JUL, 30	1235	8.8	258	28.0

RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR

LOCATION.--Lat 18°04'15", long 66°34'51", Hydrologic Unit 21010004, on right bank off Highway 139, 2.3 mi (3.7 km) upstream from Quebrada Ausubo and 4.6 mi (7.4 km) northeast of Plaza Degetau in Ponce.

DRAINAGE AREA.--17.8 sq mi (46.1 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to April 1964 (monthly measurements only), May 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 253.10 ft (77.145 m) above mean sea level, datum of 1929. Prior to Mar 22, 1977, at site 0.15 mi (0.24 km) upstream and datum 9.90 ft (3.018 m) higher.

REMARKS.--Records fair. Some low-flow regulation by construction upstream.

AVERAGE DISCHARGE.--20 years (1965-84), 35.1 cu ft/s (1.994 cu m/s), 26.78 in/yr (680 mm/yr), 25,430 acre-ft/yr (31.4 cu hm/yr); median of yearly mean discharges, 33 cu ft/s (0.93 cu m/s), 23,900 acre-ft/yr (29 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 cu ft/s (634 cu m/s) Sept. 16, 1975, gage height, 11.2 ft (3.41 m), site and datum then in use, from floodmarks, from rating curve extended above 150 cu ft/s (4.25 cu m/s) on basis of slope-area measurement of peak flow; minimum, 2.2 cu ft/s (0.062 cu m/s) May 28. 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 cu ft/s (34.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 18	2115	*865	24.5	7.15	2.179

Minimum discharge, 4.0 cu ft/s (0.113 cu m/s) May 9,10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	23	26	9.2	6.2	6.7	6.5	5.0	18	7.2	11	26
2	11	22	25	8.7	6.2	6.9	6.3	4.9	24	6.9	10	80
3	13	29	21	8.7	6.7	6.7	6.0	4.8	16	6.7	9.2	48
4	18	141	17	9.0	9.0	6.6	11	4.8	14	13	14	30
5	20	92	15	13	11	6.5	13	4.8	14	82	22	23
6	14	90	55	9.7	7.4	6.5	6.5	4.8	19	26	11	32
7	14	101	13	11	8.2	6.4	5.9	4.7	14	14	9.2	15
8	33	96	13	27	7.6	6.1	5.4	4.4	18	10	8.7	15
9	31	66	13	25	26	6.9	5.1	4.2	12	9.4	8.4	10
10	52	56	13	12	23	6.9	5.2	4.1	29	8.9	8.0	10
11	69	45	15	10	15	6.3	15	4.6	21	8.8	7.6	18
12	74	43	14	9.5	13	6.2	7.7	4.7	18	8.7	9.7	40
13	48	37	13	9.3	11	5.9	6.1	7.8	13	7.7	14	67
14	39	34	14	9.7	11	5.8	13	9.2	11	9.1	9.1	59
15	33	33	15	9.7	9.4	5.8	11	7.8	9.2	12	20	46
16	60	30	13	8.5	11	5.8	6.3	25	9.0	8.0	20	46
17	77	29	13	8.0	9.0	9.7	5.8	7.3	18	8.0	11	124
18	55	37	14	8.3	8.2	6.4	5.5	5.9	64	40	9.3	221
19	44	28	12	8.1	7.7	5.9	5.3	5.6	44	46	8.8	203
20	35	26	16	8.0	7.4	5.6	5.1	5.5	32	31	9.0	211
21	49	25	29	7.8	7.3	6.1	5.0	22	21	16	8.1	150
22	99	24	19	7.8	7.1	5.7	5.5	57	17	17	7.8	120
23	92	23	13	7.6	7.1	14	5.2	35	13	12	7.8	88
24	52	22	11	7.6	7.0	7.1	5.0	48	15	9.6	7.6	71
25	39	21	11	7.6	6.9	5.9	5.3	33	19	8.4	7.4	67
26	33	23	10	7.2	6.9	5.8	10	34	9.0	7.6	41	55
27	28	23	13	7.0	6.8	6.1	12	17	12	7.5	35	80
28	25	21	11	6.7	6.9	5.6	7.0	42	9.2	35	14	93
29	36	19	9.7	6.7	6.8	6.1	5.8	39	8.2	27	9.9	80
30	31	26	9.7	6.4	---	6.4	5.3	26	7.7	15	18	75
31	25	---	9.4	6.4	---	5.9	---	23	---	12	24	---
TOTAL	1262	1288	495.8	301.2	276.8	204.3	217.8	505.9	548.3	530.5	410.6	2203
MEAN	40.7	42.9	16.0	9.72	9.54	6.59	7.26	16.3	18.3	17.1	13.2	73.4
MAX	99	141	55	27	26	14	15	57	64	82	41	221
MIN	11	19	9.4	6.4	6.2	5.6	5.0	4.1	7.7	6.7	7.4	10
CFSM	2.29	2.41	.90	.55	.54	.37	.41	.92	1.03	.96	.74	4.12
IN.	2.64	2.69	1.04	.63	.58	.43	.46	1.06	1.15	1.11	.86	4.60
AC-FT	2500	2550	983	597	549	405	432	1000	1090	1050	814	4370

CAL YR 1983 TOTAL 9688.4 MEAN 26.5 MAX 206 MIN 6.5 CFSM 1.49 IN 20.25 AC-FT 19220
WTR YR 1984 TOTAL 8244.2 MEAN 22.5 MAX 221 MIN 4.1 CFSM 1.26 IN 17.23 AC-FT 16350

RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
17...	1515	44	252	8.3	22.0	7.0	7.9	92	26	2200	4600
DEC											
12...	1520	14	278	8.7	27.0	1.6	8.6	109	13	K110	K82
MAR , 1984											
02...	1340	6.8	232	9.1	23.0	1.5	10.5	135	<10	40	64
APR											
26...	1855	18	244	8.4	26.0	260	8.4	105	<10	4600	12000
JUN											
26...	1330	8.0	251	8.9	30.0	12	9.3	124	12	300	180
AUG											
22...	1300	7.8	270	8.8	32.0	3.5	8.4	116	47	230	350

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
17...	110	5	33	5.8	9.1	.4	1.1	101	15	6.7	.10
DEC											
12...	--	--	--	--	--	--	--	116	--	--	--
MAR , 1984											
02...	--	--	--	--	--	--	--	95	--	--	--
APR											
26...	97	0	31	4.3	10	.5	1.4	119	22	8.0	.10
JUN											
26...	--	--	--	--	--	--	--	102	--	--	--
AUG											
22...	100	0	32	5.7	11	.5	1.1	105	22	7.7	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
17...	22	150	18	16	.88	.02	.90	.06	.24	.30	1.2
DEC											
12...	--	--	--	5	.28	.02	.30	.05	.15	.20	.50
MAR , 1984											
02...	--	--	--	3	--	<.01	<.10	.14	.46	.60	--
APR											
26...	18	170	32	546	.57	.03	.60	.01	1.6	1.6	2.2
JUN											
26...	--	--	--	20	--	<.01	<.10	.07	.53	.60	--
AUG											
22...	21	160	4.9	98	--	<.01	<.10	.02	.38	.60	--

K = non-ideal count

RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
17...	5.3	.06	1	<100	1	4	2	<.1	<1	<1
DEC										
12...	2.2	.05	--	--	--	--	--	--	--	--
MAR , 1984										
02...	--	.07	--	--	--	--	--	--	--	--
APR										
26...	9.7	.34	1	200	2	2	8	.1	<1	<1
JUN										
26...	--	.07	--	--	--	--	--	--	--	--
AUG										
22...	--	.02	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV, 03	0910	20	269	24.0	MAY, 15	1345	7.0	278	27.5
JAN, 19	1053	8.1	276	23.0					

RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR

LOCATION.--Lat 18°04'45", long 66°38'01", Hydrologic Unit 21010004, on right bank 30 ft upstream from bridge on Highway 504, 0.2 mi (0.3 km) upstream from small unnamed tributary, 4.4 mi (7.1 km) upstream from Río Chiquito, and 4.7 mi (7.6 km) north of Plaza Degetau in Ponce.

DRAINAGE AREA.--8.82 sq mi (22.84 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to June 1964 (monthly measurements only), July 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 470 ft (143 m), from topographic map. Prior to Dec. 4, 1964, non-recording gage at same site and datum.

REMARKS.--Records fair. Some low-flow regulation due to unknown activity upstream.

AVERAGE DISCHARGE.--20 years (1965-84), 18.0 cu ft/s (0.510 cu m/s), 27.71 in/yr (704 mm/yr), 13,040 acre-ft/yr (16.1 cu hm/yr); median of yearly mean discharges, 17 cu ft/s (0.48 cu m/s), 12,300 acre-ft/yr (15 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 cu ft/s (371 cu m/s) Sept. 16, 1975, gage height, 10.1 ft (3.08 m), from floodmarks at downstream side of bridge, from rating curve extended above 150 cu ft/s (4.25 cu m/s) on basis of slope-area measurement of peak flow; minimum, 1.0 cu ft/s (0.028 cu m/s) May 29, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 cu ft/s (22.7 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 17	1530	*1,940	54.9	8.03	2.448	Sept. 18	2130	1,510	42.8	7.20	2.194

Minimum discharge, 1.0 cu ft/s (0.028 cu m/s) Apr. 29, May 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	12	9.1	10	3.6	3.4	3.1	1.7	6.7	2.5	4.2	11
2	5.0	10	8.0	10	3.6	3.0	3.1	2.0	5.6	2.5	2.4	22
3	5.0	14	7.2	9.1	4.8	3.4	3.1	1.6	3.3	2.4	2.4	16
4	8.5	180	6.5	6.7	4.0	3.6	9.7	1.8	5.2	11	4.4	8.1
5	11	75	6.3	7.3	4.6	3.5	8.8	1.7	27	50	5.2	9.5
6	5.6	96	6.3	6.3	5.2	3.7	5.2	1.5	20	16	3.6	13
7	5.0	82	6.1	6.8	4.8	3.2	4.2	1.4	9.1	8.1	3.1	6.0
8	5.0	45	6.0	23	4.5	2.9	3.2	1.2	6.9	4.8	2.6	4.3
9	8.5	30	5.8	17	9.1	2.9	3.0	1.3	5.8	4.4	2.8	3.1
10	24	22	5.8	9.6	68	2.8	2.9	1.4	22	4.6	2.0	3.9
11	22	18	5.9	8.2	16	2.7	11	1.5	13	3.5	2.0	3.0
12	64	17	5.6	8.5	12	2.8	3.9	1.9	8.7	3.1	2.2	11
13	30	15	5.8	6.4	9.0	3.0	2.8	7.1	6.0	3.4	2.4	16
14	13	14	8.5	6.5	8.0	2.9	8.8	6.1	5.2	8.1	2.2	12
15	9.4	13	8.4	8.5	7.1	2.8	4.7	3.7	4.7	6.4	2.6	53
16	27	13	6.0	6.8	6.7	2.8	3.5	4.9	4.5	4.0	3.4	20
17	66	14	6.7	7.0	6.3	3.0	3.3	2.1	4.9	6.4	2.4	221
18	34	13	7.2	6.3	6.3	2.6	3.2	1.9	11	6.9	2.4	319
19	22	11	6.2	5.5	6.3	2.6	3.0	1.7	13	49	3.6	152
20	14	11	5.7	4.7	5.9	2.6	2.9	1.6	13	17	3.6	250
21	25	11	33	4.7	5.5	2.7	2.8	7.5	6.2	7.7	3.6	108
22	95	10	11	4.1	4.8	2.7	2.8	27	4.8	5.9	3.1	52
23	55	9.3	5.7	3.9	4.5	4.9	2.7	15	3.6	4.2	3.1	28
24	24	8.5	5.9	3.4	4.2	5.5	2.6	36	3.5	3.4	2.2	17
25	15	7.8	5.7	3.3	3.9	2.8	2.8	19	3.1	2.0	17	18
26	13	7.0	6.2	3.2	3.6	3.1	5.1	11	3.1	2.0	18	10
27	12	6.7	6.5	3.1	3.4	2.8	6.9	11	4.2	2.2	16	69
28	11	6.7	6.5	3.3	3.1	2.6	3.2	39	4.7	50	12	47
29	25	6.5	7.4	3.0	3.1	2.6	2.2	21	3.2	9.0	10	31
30	16	8.6	8.1	3.4	---	2.8	1.9	12	2.4	3.6	15	45
31	12	---	8.2	3.6	---	2.9	---	8.5	---	3.6	12	---
TOTAL	687.6	787.1	237.3	213.2	231.9	95.6	126.4	255.1	234.4	307.7	171.5	1576.9
MEAN	22.2	26.2	7.65	6.88	8.00	3.08	4.21	8.23	7.81	9.93	5.53	52.6
MAX	95	180	33	23	68	5.5	11	39	27	50	18	319
MIN	5.0	6.5	5.6	3.0	3.1	2.6	1.9	1.2	2.4	2.0	2.0	3.0
CFSM	2.52	2.97	.87	.78	.91	.35	.48	.93	.89	1.13	.63	5.96
IN.	2.90	3.32	1.00	.90	.98	.40	.53	1.08	.99	1.30	.72	6.65
AC-FT	1360	1560	471	423	460	190	251	506	465	610	340	3130

CAL YR 1983 TOTAL 6307.2 MEAN 17.3 MAX 298 MIN 3.4 CFSM 1.96 IN 26.60 AC-FT 12510
WTR YR 1984 TOTAL 4924.7 MEAN 13.5 MAX 319 MIN 1.2 CFSM 1.53 IN 20.77 AC-FT 9770

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RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
18...	0935	31	233	8.1	22.0	25	8.8	103	<10	2100	8100
DEC											
13...	0925	5.9	215	8.4	21.0	3.2	8.3	100	<10	200	440
MAR , 1984											
02...	1045	3.2	298	8.6	24.0	1.5	10.1	122	<10	64	320
APR											
26...	1030	2.7	299	8.7	24.5	1.3	10.2	123	11	60	330
JUN											
26...	1815	3.7	296	8.6	26.0	1.8	8.4	105	15	K180	2100
AUG											
22...	1815	3.2	292	8.6	27.0	1.0	7.2	92	<10	350	420

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
18...	99	4	31	5.2	8.0	.4	1.1	95	7.8	6.6	<.10
DEC											
13...	--	--	--	--	--	--	--	148	--	--	--
MAR , 1984											
02...	--	--	--	--	--	--	--	134	--	--	--
APR											
26...	140	0	42	7.5	11	.4	1.1	148	9.8	9.7	.20
JUN											
26...	--	--	--	--	--	--	--	131	--	--	--
AUG											
22...	120	0	37	6.5	9.9	.4	1.2	131	8.2	8.8	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983										
18...	20	140	11	26	<.01	1.7	.04	.66	.70	2.4
DEC										
13...	--	--	--	5	<.01	.90	.02	.28	.30	1.2
MAR , 1984										
02...	--	--	--	6	<.01	.60	<.01	--	.20	.80
APR										
26...	21	190	1.4	<1	<.01	.40	<.01	--	.30	.70
JUN										
26...	--	--	--	6	<.01	.30	.05	--	<.10	--
AUG										
22...	20	170	1.5	3	<.01	.40	<.01	--	.30	.70

K = non-ideal count

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50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
18...	11	.07	1	<100	1	5	1	<.1	<1	2
DEC										
13...	5.3	.05	--	--	--	--	--	--	--	--
MAR , 1984										
02...	3.5	.02	--	--	--	--	--	--	--	--
APR										
26...	3.1	.05	1	<100	1	1	<1	.5	<1	<1
JUN										
26...	--	.02	--	--	--	--	--	--	--	--
AUG										
22...	3.1	.04	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
NOV, 03	1105	10	293	24.0	MAY, 15	1319	3.4	294	28.0
JAN, 19	1434	4.9	293	24.5					

RIO PORTUGUES BASIN

50116200 RIO PORTUGUES AT PONCE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'20", long 66°36'28", 1,300 ft (400 m) south of Las Americas Avenue Bridge, 1.2 mi (1.9 km) south of CSG 50115900, 0.8 mi (1.3 km) west of Highways 1 and 2 junction, and 0.7 mi (1.1 km) southeast of Ponce.

DRAINAGE AREA.--18.9 sq mi (49.0 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
18...	1315	39	293	8.2	30.0	33	7.2	96	26	K140000	62000
DEC											
13...	1520	5.3	439	9.3	31.0	65	5.6	76	19	K200000	45000
MAR , 1984											
01...	1710	2.6	522	8.7	30.5	12	5.4	72	20	K7900	3200
APR											
27...	0930	4.1	490	9.0	25.0	5.6	5.0	61	24	40000	5000
JUN											
25...	1800	3.3	482	8.0	30.0	17	5.1	61	27	K170000	4500
AUG											
22...	0805	1.9	580	7.8	25.5	12	3.6	44	15	47000	67000

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
18...	110	0	34	5.7	13	.6	2.2	112	18	12	.20
DEC											
13...	--	--	--	--	--	--	--	117	--	--	--
MAR , 1984											
01...	--	--	--	--	--	--	--	122	--	--	--
APR											
27...	160	12	43	12	32	1	2.7	145	55	28	.20
JUN											
25...	--	--	--	--	--	--	--	131	--	--	--
AUG											
22...	170	12	45	13	48	2	2.4	134	81	39	.40

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
18...	18	170	18	54	1.3	.03	1.3	.30	.80	1.1	2.4
DEC											
13...	--	--	--	84	.14	.06	.20	.86	1.2	2.1	2.3
MAR , 1984											
01...	--	--	--	6	.42	.18	.60	.61	.69	1.3	1.9
APR											
27...	15	270	3.0	16	.13	.07	.20	1.4	.20	1.6	1.8
JUN											
25...	--	--	--	32	.15	.15	.30	1.0	.70	1.7	2.0
AUG											
22...	19	340	1.7	3	.04	.06	.10	1.6	.70	2.3	2.4

K = non-ideal count

50116200 RIO PORTUGUES AT PONCE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
18...	11	.23	1	<100	1	3	3	<.1	<1	<1
DEC										
13...	10	.56	--	--	--	--	--	--	--	--
MAR , 1984										
01...	9.6	.52	--	--	--	--	--	--	--	--
APR										
27...	9.0	.45	1	<100	1	2	2	.2	<1	<1
JUN										
25...	9.9	.57	--	--	--	--	--	--	--	--
AUG										
22...	11	.55	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JUN , 1984								
25...	1900	<.1	<.01	<.1	<.01	<.01	<.01	.03

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
JUN , 1984									
25...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)
JUN , 1984								
25...	<.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

50124200 RIO GUAYANILLA NEAR GUAYANILLA, P.R.

LOCATION.--Lat 18°02'40", long 66°47'53", Hydrologic Unit 21010004, on left bank, 0.7 mi (1.1 km) north of junction of Highways 2 and 132, 0.6 mi (1.0 km) downstream from Quebrada Consejo, 1.8 mi (2.9 km) north-northwest from Plaza de Guayanilla.

DRAINAGE AREA.--18.9 sq mi (49.0 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 80 ft (24.4 m) from topographic map.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,700 cu ft/s (416 cu m/s) Sept. 12, 1982, gage height, 20.4 ft (6.21 m) from floodmarks, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of step-backwater analysis and indirect measurement of peak flow; minimum, 1.8 cu ft/s (0.051 cu m/s) Apr. 17-19, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 cu ft/s (22.7 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 20	0100	*753	21.3	9.21	2.807

Minimum discharge, 2.7 cu ft/s (0.076 cu m/s) May 9-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	21	14	11	5.9	5.5	4.1	3.5	4.1	3.6	6.0	11
2	6.5	20	15	10	6.3	5.4	4.2	3.9	4.1	3.4	9.0	23
3	7.0	31	15	9.8	6.8	5.2	4.2	3.4	3.8	3.2	7.1	75
4	6.6	139	14	10	7.3	4.7	4.4	3.1	4.0	3.4	6.7	42
5	6.9	105	14	12	7.6	4.9	4.2	3.0	19	31	6.7	16
6	6.1	70	14	11	7.5	5.3	3.9	2.9	15	9.7	6.6	17
7	5.7	111	13	10	7.6	5.0	4.0	2.9	7.2	5.8	6.4	9.6
8	5.7	65	13	19	7.5	4.5	3.8	2.8	5.7	4.7	6.4	7.7
9	5.7	46	13	14	13	4.3	3.7	2.8	4.9	4.3	6.5	6.6
10	40	57	13	9.9	13	4.6	3.8	2.7	4.3	4.5	6.4	6.1
11	31	75	14	7.5	9.0	4.5	4.9	2.8	7.8	4.4	6.4	6.6
12	68	45	15	9.2	7.5	4.3	4.6	3.1	8.5	4.4	5.9	6.4
13	52	49	16	7.8	8.8	4.2	3.9	5.7	5.6	4.2	6.2	7.2
14	63	36	23	7.7	10	3.8	3.8	6.3	4.8	7.6	6.0	11
15	48	29	23	7.1	7.3	3.9	3.8	4.9	4.4	9.1	6.7	9.4
16	48	26	20	6.9	6.9	3.9	3.6	5.1	4.0	5.4	6.3	12
17	75	23	83	5.7	6.9	3.8	3.6	4.6	4.6	5.9	5.7	30
18	58	22	70	6.6	6.7	3.7	3.6	3.8	15	10	5.5	161
19	46	21	24	6.4	6.6	3.2	3.3	3.5	12	11	5.2	228
20	38	20	16	6.5	6.8	3.2	3.2	3.3	5.8	22	5.2	408
21	80	18	80	6.3	6.7	3.3	3.2	3.3	4.6	12	5.2	138
22	76	18	50	6.3	6.5	3.1	3.4	4.7	4.2	7.8	5.1	65
23	57	18	24	7.6	6.6	3.2	3.3	13	3.9	6.0	5.0	45
24	39	17	18	6.5	6.6	4.8	3.3	36	3.7	5.6	4.8	23
25	30	16	15	5.9	6.4	3.3	3.2	19	3.6	5.2	5.0	19
26	25	16	14	5.7	6.2	3.2	11	6.7	3.7	5.2	9.4	10
27	22	15	13	5.8	6.2	3.4	13	5.1	3.6	6.9	5.5	35
28	21	14	12	5.8	5.7	3.5	5.1	5.0	3.8	10	7.1	22
29	42	14	12	5.7	5.5	3.5	3.8	7.2	3.5	13	5.2	11
30	50	14	11	5.9	---	3.5	3.7	5.3	4.1	7.1	27	7.1
31	27	---	11	5.9	---	3.6	---	4.8	---	6.1	15	---
TOTAL	1095.9	1171	702	255.6	215.4	126.3	131.6	184.2	183.3	242.5	221.2	1468.7
MEAN	35.4	39.0	22.6	8.25	7.43	4.07	4.39	5.94	6.11	7.82	7.14	49.0
MAX	80	139	83	19	13	5.5	13	36	19	31	27	408
MIN	5.7	14	11	5.7	5.5	3.1	3.2	2.7	3.5	3.2	4.8	6.1
CFSM	1.87	2.06	1.20	.44	.39	.22	.23	.31	.32	.41	.38	2.59
IN.	2.16	2.30	1.38	.50	.42	.25	.26	.36	.36	.48	.44	2.89
AC-FT	2170	2320	1390	507	427	251	261	365	364	481	439	2910

CAL YR 1983 TOTAL 6992.6 MEAN 19.2 MAX 327 MIN 3.0 CFSM 1.02 IN 13.76 AC-FT 13870
WTR YR 1984 TOTAL 5997.7 MEAN 16.4 MAX 408 MIN 2.7 CFSM .87 IN 11.80 AC-FT 11900

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 03	1240	5.4	323	31.5	MAR, 20	1342	3.2	351	30.0
NOV, 02	1020	20	346	25.0	APR, 14	1206	4.5	359	29.0
DEC, 07	1145	14	432	25.0	MAY, 02	1008	4.4	390	28.0
JAN, 18	1043	6.8	412	25.0	JUN, 05	1236	3.9	335	33.5
FEB, 16	1006	6.9	384	24.5	AUG, 03	0810	7.3	360	25.5

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RIO GUAYANILLA BASIN

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'40", long 66°46'49", at dirt road bridge, 0.7 mi (1.1 km) from mouth, 0.9 mi (1.4 km) east of Central Rufina and and 0.9 mi (1.4 km) southeast of Guayanilla.

DRAINAGE AREA.--22.8 sq mi (59.1 sq km).

PERIOD OF RECORD.--Water years 1960-65, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
19...	0925	47	322	8.1	25.5	45	8.3	102	<10	52000	57000
DEC											
14...	0905	1.6	835	7.7	24.0	1.5	.0	0	27	K660000	K110000
MAR , 1984											
01...	1435	1.1	933	7.7	31.5	3.4	.0	0	85	K1000000	K170000
APR											
25...	1715	.51	1020	7.8	30.5	1.0	.0	0	93	3500000	37000
JUN											
27...	0930	1.2	1040	7.7	27.0	2.7	1.2	15	73	K110000	K11000
AUG											
23...	0800	.96	1070	7.8	27.0	1.5	.0	0	87	K990000	K120000

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
19...	160	22	38	10	10	.4	1.5	114	27	11	.10
DEC											
14...	--	--	--	--	--	--	--	256	--	--	--
MAR , 1984											
01...	--	--	--	--	--	--	--	326	--	--	--
APR											
25...	270	0	73	21	75	2	8.3	344	110	100	.20
JUN											
27...	--	--	--	--	--	--	--	323	--	--	--
AUG											
23...	280	2	79	21	74	2	8.2	292	79	73	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
19...	17	180	23	33	1.1	.02	1.1	.35	.45	.80	1.9
DEC											
14...	--	--	--	6	--	.02	<.10	6.5	2.9	9.4	--
MAR , 1984											
01...	--	--	--	12	--	.02	<.10	20	25	45	--
APR											
25...	27	620	.85	12	--	.02	<.10	20	5.0	25	--
JUN											
27...	--	--	--	6	--	.07	<.10	14	--	13	--
AUG											
23...	27	530	1.2	12	--	.02	<.10	17	11	28	--

K = non-ideal count

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RIO GUAYANILLA BASIN

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983 19...	8.6	.20	1	<100	1	9	3	<.1	<1	<1
DEC 14...	--	.20	--	--	--	--	--	--	--	--
MAR , 1984 01...	--	4.5	--	--	--	--	--	--	--	--
APR 25...	--	5.4	2	100	1	2	1	.6	<1	2
JUN 27...	--	3.6	--	--	--	--	--	--	--	--
AUG 23...	--	4.9	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JUN , 1984 27...	0930	<.1	<.01	<.1	<.01	<.01	<.01	.14

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
JUN , 1984 27...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)
JUN , 1984 27...	<.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

RIO YAUCO BASIN

50126150 RIO YAUCO ABOVE DIVERSION MONSERRATE NEAR YAUCO, PR

LOCATION.--Lat 18°02'58", long 66°50'30", Hydrologic Unit 21010004, on right bank off Highway 375, about 300 ft (91 m) upstream from diversion Monserrate, 0.1 mi (0.2 km) downstream from Quebrada de las Quebradas, 0.9 mi (1.4 km) downstream from Río Duey, and 1.0 mi (1.6 km) northeast of Yauco Plaza.

DRAINAGE AREA.--27.2 sq mi (70.4 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 115 ft (35 m), from topographic map.

REMARKS.--Records poor. Flow affected by numerous diversions into and out of the basin.

AVERAGE DISCHARGE.--7 years (1978-84), 21.8 cu ft/s (0.617 cu m/s), 10.88 in /yr (276 mm/yr), 15,790 acre-ft/yr (19.5 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,500 cu ft/s (297 cu m/s) Aug. 31, 1979, gage height, 9.83 ft (2.996 m) from floodmark, from rating curve extended above 300 cu ft/s (8.50 cu m/s) on basis of step-backwater analysis; minimum daily discharge, 0.2 cu ft/s (0.006 cu m/s) June 30, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 cu ft/s (28.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Sept. 19	2000	*2,260	64.0	5.55	1.692

Minimum discharge, 1 2 cu ft/s (0.034 cu m/s) Mar. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	9.2	8.6	7.9	34	2.6	2.7	6.3	3.2	2.5	3.7	29
2	5.7	6.5	8.9	7.9	59	2.2	3.8	14	3.2	2.5	8.4	74
3	4.5	40	9.5	7.6	6.1	2.0	4.1	3.9	3.1	2.4	5.6	95
4	5.1	238	7.3	8.1	8.1	1.7	3.9	3.2	3.7	2.5	4.3	45
5	5.5	102	7.1	12	8.4	1.8	2.8	3.0	3.6	155	4.1	7.0
6	4.9	34	7.0	13	6.0	2.4	3.0	3.0	5.6	19	4.1	13
7	4.5	117	6.7	13	6.2	2.0	2.7	2.8	4.5	7.0	3.8	3.6
8	3.5	29	7.1	11	5.3	1.9	2.7	2.6	3.8	5.0	3.7	2.4
9	2.3	7.5	5.7	14	29	1.9	2.4	2.6	3.4	4.4	3.6	2.0
10	15	108	5.0	9.5	32	3.0	2.0	2.6	3.0	4.0	3.4	1.9
11	9.6	105	5.2	27	12	2.1	2.3	2.6	3.0	4.0	3.4	3.8
12	56	17	5.1	8.6	13	4.3	2.3	2.4	8.0	3.9	3.4	4.8
13	24	52	4.8	7.1	5.8	3.4	2.2	4.6	3.5	3.7	3.5	2.9
14	85	35	10	7.0	17	2.7	2.7	8.0	2.9	3.9	3.3	5.1
15	26	16	4.6	6.3	6.2	2.8	3.3	4.4	2.6	7.2	3.2	6.3
16	11	13	5.4	6.1	25	2.8	3.3	16	2.6	4.3	3.2	41
17	88	10	107	6.2	26	2.9	3.8	20	2.6	3.6	3.0	98
18	43	9.6	43	6.7	5.0	2.4	4.2	4.4	5.5	5.8	2.8	257
19	24	8.9	4.5	9.5	3.7	1.7	3.7	3.2	12	24	2.6	290
20	5.4	8.3	2.2	8.6	3.5	2.1	3.5	3.0	4.2	49	2.6	361
21	114	7.7	126	9.2	2.5	2.0	3.3	2.5	3.4	6.8	2.6	204
22	106	7.4	74	11	2.8	2.1	3.3	2.9	2.9	5.3	2.6	51
23	41	7.2	21	31	3.3	2.7	3.3	11	2.6	4.5	2.6	20
24	15	7.5	15	7.5	2.4	4.4	3.1	67	2.4	4.0	2.7	19
25	9.3	8.5	12	5.7	2.1	3.0	3.1	45	2.4	3.7	2.9	15
26	8.1	10	12	5.5	1.8	2.3	3.4	7.6	2.5	3.5	3.1	7.6
27	9.4	10	9.7	5.4	1.7	2.4	7.4	5.4	2.3	4.0	2.8	31
28	9.2	9.5	9.5	6.4	2.1	1.7	4.2	4.9	2.2	11	4.6	17
29	135	9.0	9.0	8.0	1.7	1.7	3.0	6.3	2.3	19	2.8	8.0
30	53	8.6	8.4	6.8	---	1.9	3.1	4.6	2.4	5.3	11	5.9
31	17	---	7.6	7.9	---	1.9	---	4.0	---	4.0	36	---
TOTAL	944.3	1051.4	568.9	301.5	331.7	74.8	98.6	273.8	109.4	384.8	149.4	1721.3
MEAN	30.5	35.0	18.4	9.73	11.4	2.41	3.29	8.83	3.65	12.4	4.82	57.4
MAX	135	238	126	31	59	4.4	7.4	67	12	155	36	361
MIN	2.3	6.5	2.2	5.4	1.7	1.7	2.0	2.4	2.2	2.4	2.6	1.9
CFSM	1.12	1.29	.68	.36	.42	.09	.12	.33	.13	.46	.18	2.11
IN.	1.29	1.44	.78	.41	.45	.10	.13	.37	.15	.53	.20	2.35
AC-FT	1870	2090	1130	598	658	148	196	543	217	763	296	3410

CAL YR 1983 TOTAL 6957.3 MEAN 19.1 MAX 735 MIN 1.5 CFSM .70 IN 9.51 AC-FT 13800
WTR YR 1984 TOTAL 6009.9 MEAN 16.4 MAX 361 MIN 1.7 CFSM .60 IN 8.22 AC-FT 11920

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RIO YAUCO BASIN

50126150 RIO YAUCO ABOVE DIVERSION MONSERRATE NEAR YAUCO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 04	0555	4.6	393	26.0
NOV, 01	1030	5.1	384	26.0
DEC, 06	1050	7.2	473	25.0
JAN, 17	1105	6.1	430	25.0
FEB, 15	1212	6.1	389	24.5
MAR, 19	1435	2.2	417	29.0
APR, 03	1255	4.8	414	28.0
JUN, 04	1045	3.9	392	29.0
AUG, 02	0835	8.4	366	26.0

RIO YAUCO BASIN

50128000 RIO YAUCO NEAR YAUCO, PR

LOCATION.--Lat 17°59'19", long 66°49'55", Hydrologic Unit 21010004, on right bank at downstream side of bridge on Highway 335, 0.8 mi (1.3 km) northwest of Central San Francisco and 3.4 mi (5.5 km) southeast of junction of Highways 335 and 2 in Yauco.

DRAINAGE AREA.--45.5 sq mi (117.8 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 (discharge measurements only), May 1961 to December 1964, November 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 15.14 ft (4.615 m) above mean sea level, datum of 1929. Prior to Oct. 1, 1978, at same site at datum 4.0 ft (1.219 m) higher.

REMARKS.--Records poor. Natural flow of stream is affected by transbasin diversions, storage reservoirs, power development, diversions for irrigation and municipal use, and return flow from irrigated areas.

AVERAGE DISCHARGE.--7 years (1978-84), 19.5 cu ft/s (0.552 cu m/s), 5.82 in/yr (148 mm/yr), 14,130 acre-ft/yr (17.4 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,300 cu ft/s (292 cu m/s) Sept. 13, 1982, gage height, 15.0 ft (4.57 m), from floodmarks, from rating curve extended above 2,000 cu ft/s (56.6 cu m/s) on basis of step-backwater analysis and indirect measurement of peak flow; no flow many days in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 cu ft/s (28.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 4	2000	1,370	38.8	10.94	3.334	July 5	1015	1,200	34.0	10.49	3.197
Nov. 7	1900	1,100	31.2	10.21	3.112	Sept. 18	2045	1,640	46.4	11.58	3.530
Nov. 10	2200	1,120	31.7	10.28	3.133	Sept. 20	0415	*2,070	58.6	12.50	3.810
Dec. 17	2000	1,360	38.5	10.92	3.328	Sept. 20	2330	1,820	51.5	11.99	3.654
Dec. 21	2100	1,510	42.8	11.27	3.435						

Minimum discharge, 0.11 cu ft/s (0.003 cu m/s) Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	3.4	2.1	1.5	.47	.80	1.1	.87	1.2	.57	.58	29
2	1.6	2.8	2.4	1.5	84	.76	1.2	.86	1.2	.56	.80	26
3	1.7	56	3.6	1.4	8.3	.75	1.2	.80	1.2	.49	.62	140
4	1.7	484	2.9	1.2	2.5	.70	1.3	.76	1.2	.66	.58	191
5	1.6	249	2.6	1.4	2.0	.69	1.3	.68	1.2	447	.57	17
6	1.6	136	2.2	1.7	1.9	.71	1.3	.63	1.3	61	.57	50
7	1.6	208	2.1	2.2	1.8	.74	1.2	.68	1.3	8.5	.64	8.0
8	1.6	96	2.1	1.5	1.7	.88	1.1	.67	1.2	3.7	.77	2.4
9	1.6	22	2.0	5.3	3.7	.80	.98	.64	1.1	2.7	.81	1.9
10	1.5	136	2.0	3.8	30	.75	1.1	.61	1.2	3.3	.81	2.0
11	2.1	226	1.9	52	13	.68	1.1	.57	1.1	3.8	.72	1.6
12	5.4	39	1.9	17	3.2	.69	.98	.73	1.1	2.7	.76	1.5
13	42	46	1.9	2.0	5.5	.73	.85	1.3	1.0	2.2	1.2	1.4
14	53	45	1.8	1.7	3.9	.77	.79	1.3	.91	1.9	.81	1.2
15	57	13	4.2	1.2	3.4	.84	.71	1.1	.83	1.7	.69	1.3
16	9.9	9.5	2.3	.95	15	.92	.70	33	.78	1.6	.61	1.1
17	49	7.5	194	.92	68	.88	.86	3.0	.90	1.2	.57	81
18	86	6.2	154	.94	3.0	.79	1.0	1.3	.78	1.0	.56	675
19	21	5.7	32	.75	.58	.79	.82	1.0	.79	.90	.49	633
20	6.2	5.0	7.0	.78	.64	1.0	.78	1.2	.84	17	.52	1610
21	67	4.4	201	.77	.35	1.3	.70	1.2	.89	3.6	.52	1010
22	63	3.9	117	.71	.65	1.3	.70	1.2	.83	1.0	.51	175
23	20	3.6	10	9.9	.75	1.3	.73	1.2	.66	.86	.48	53
24	5.1	3.9	5.0	9.3	.83	1.2	.73	3.1	.57	.95	.40	26
25	3.3	3.3	3.4	.94	.91	1.1	.73	96	.49	.72	.40	38
26	2.4	2.7	2.8	.66	.93	1.1	.76	5.2	.41	.65	.36	13
27	2.2	2.3	2.3	.56	.84	1.1	.86	1.3	.34	.53	.29	11
28	2.0	2.2	2.3	.51	.82	1.1	.86	1.2	.27	.46	.32	33
29	117	2.2	2.0	.45	.80	1.2	.82	1.2	.35	.46	.30	13
30	71	2.2	1.8	.44	---	1.3	1.0	1.2	.52	.65	.23	12
31	9.1	---	1.6	.44	---	1.2	---	1.2	---	.57	.20	---
TOTAL	709.9	1824.8	774.2	124.92	259.07	28.67	28.26	165.70	26.46	572.91	17.69	4861.4
MEAN	22.9	60.8	25.0	4.03	8.93	.93	.94	5.35	.88	18.5	.57	162
MAX	117	484	201	52	84	1.3	1.3	96	1.3	447	1.2	1610
MIN	1.5	2.2	1.6	.44	.35	.68	.70	.57	.27	.46	.20	1.1
CFSM	.50	1.34	.55	.09	.20	.02	.02	.12	.02	.41	.01	3.56
IN.	.58	1.49	.63	.10	.21	.02	.02	.14	.02	.47	.01	3.97
AC-FT	1410	3620	1540	248	514	57	56	329	52	1140	35	9640

CAL YR 1983 TOTAL 7303.08 MEAN 20.0 MAX 1430 MIN .53 CFSM .44 IN 5.97 AC-FT 14490
WTR YR 1984 TOTAL 9394.18 MEAN 25.7 MAX 1610 MIN .20 CFSM .57 IN 7.68 AC-FT 18630

RIO YAUCO BASIN

50128000 RIO YAUCO NEAR YAUCO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 04	1035	1.7	829	28.0	MAR, 20	0929	1.1	909	24.5
NOV, 01	1215	3.1	525	27.0	APR, 04	0931	1.5	906	26.0
DEC, 06	1245	2.2	918	25.0	JUN, 05	0946	1.2	893	29.0
JAN, 17	1425	1.9	873	26.5	AUG, 02	1100	0.9	990	28.0
FEB, 15	1610	2.9	496	26.0					

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CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128950 LAJAS IRRIGATION CANAL NEAR BOQUERON, PR

LOCATION.--Lat 18°02'14", long 67°08'22", Hydrologic Unit 21010004, on downstream side of wooden foot bridge near dirt levee road, 0.5 mi (0.8 km) north of intersection of Highways 101 and 103, 1.8 mi (2.9 km) northeast of Boquerón.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1980 to September 1984 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is about 82 ft (25 m), from topographic map.

REMARKS.--Records poor.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum discharge, 34 cu ft/s (0.963 cu m/s) June 11, 1981, gage height, 2.56 ft (0.780 m) from rating curve extended above 10 cu ft/s (0.283 cu m/s) on basis of step-backwater analysis; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 32 cu ft/s (0.906 cu m/s) Mar. 26, gage height, 2.63 ft (0.802 m); no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.52	.55	.00	.00	2.1	.00	.00	6.8	1.7	3.0	.00	.00
2	.00	.00	.00	.00	5.0	1.1	.59	.00	.00	2.2	.78	.00
3	3.4	1.1	.00	1.7	3.7	.00	5.3	.00	.00	9.0	.64	.00
4	6.1	2.0	.00	.74	.74	.00	2.6	3.1	.44	12	6.1	1.8
5	4.2	.00	.00	10	.00	.00	5.4	.00	2.3	16	5.2	9.6
6	.00	.00	.00	4.8	.72	5.2	8.2	.00	2.7	1.2	2.6	7.1
7	2.4	2.3	4.2	4.5	6.7	4.5	.00	.00	3.0	.00	1.7	7.0
8	.15	.00	.00	5.3	8.6	2.1	.00	4.4	6.3	.00	3.0	.00
9	.00	.00	.00	8.6	10	.00	5.6	1.6	.00	.00	.00	.00
10	2.1	.00	.00	7.1	6.6	.00	7.2	4.8	.00	.00	.25	8.0
11	1.6	.00	.00	13	.00	.00	8.4	4.6	8.0	.00	.00	.00
12	1.8	.00	2.5	14	.00	1.9	13	.00	7.6	.00	.35	.00
13	2.0	.00	4.7	4.8	.00	10	6.4	.00	3.7	.00	3.0	.00
14	.00	.00	2.4	.45	.00	5.8	.00	2.1	8.3	.00	5.1	2.5
15	.00	.00	3.7	.75	.00	.00	.00	12	4.3	.00	2.0	1.1
16	.00	.00	.95	.74	.00	3.6	.00	4.9	.00	.00	.69	.00
17	.86	.00	.99	.00	.00	.00	.95	.73	.00	.00	.00	4.0
18	1.8	.00	1.2	.00	.00	.00	1.4	3.8	.00	1.9	.00	.00
19	3.2	.00	.85	.00	.00	.00	7.2	.00	2.4	5.6	.00	.69
20	.63	.00	2.5	.00	.00	2.1	5.1	.00	9.2	2.6	3.8	5.3
21	1.9	.00	1.2	.00	.00	2.8	5.2	2.3	4.5	.00	3.3	.00
22	.00	.90	1.1	.00	.48	8.1	6.9	2.9	7.1	.00	1.0	.00
23	.00	.00	.00	.00	1.3	15	4.2	2.0	.00	1.2	.16	.00
24	.00	.00	.00	.00	3.0	.00	5.7	2.2	.00	7.6	2.8	.00
25	.00	.00	.00	.00	.76	.00	8.4	1.6	.94	8.3	.52	.00
26	2.1	.00	.00	.00	.00	5.5	6.4	.00	1.5	7.0	.00	.00
27	2.4	.00	2.4	.00	.00	2.7	2.9	.00	8.1	.00	3.4	.00
28	.00	.00	.12	.00	3.1	7.8	.00	.00	11	.00	3.8	.00
29	.00	.00	.00	.00	2.3	6.8	.00	3.6	12	.00	.74	.00
30	.00	.00	.00	.00	---	.87	2.0	.93	3.5	.00	2.3	.00
31	.00	---	.00	.00	---	.00	---	2.5	---	.00	.66	---
TOTAL	37.16	6.85	28.81	76.48	55.10	85.87	120.03	66.86	108.58	77.60	54.09	47.09
MEAN	1.20	.23	.93	2.47	1.90	2.77	4.00	2.16	3.62	2.50	1.74	1.57
MAX	6.1	2.3	4.7	14	10	15	13	12	12	16	6.1	9.6
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	74	14	57	152	109	170	238	133	215	154	107	93

WTR YR 1984 TOTAL 764.52 MEAN 2.09 MAX 16 MIN .00 AC-FT 1520

WATER QUALITY RECORDS

PERIOD OF RECORD.--JANUARY 1983 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV, 09	1435	0.0	218	33.0	APR, 06	0902	8.2	259	24.5
DEC, 07	1720	3.4	230	27.0	MAY, 15	1707	0.0	213	27.0
JAN, 16	1500	.32	267	30.5	JUN, 06	1520	7.0	262	28.0
FEB, 09	1340	8.2	265	23.0	JUL, 12	1653	0.0	119	31.5
MAR, 07	0848	12	251	24.5	AUG, 10	1050	1.6	255	28.5

RIO LOCO BASIN

50129700 RIO LOCO AT GUANICA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 17°58'33", long 66°54'52", 0.6 mi (1.0 km) northwest of Guánica and 1.2 mi (1.9 km) northeast of Ensenada.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1975 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
19...	1125	E .00	764	7.8	27.5	17	2.9	37	30	2700	4200
DEC											
14...	1050	E .00	7510	7.8	29.5	2.5	2.4	32	36	5200	800
MAR , 1984											
01...	1215	E .00	403	8.0	26.0	7.5	5.5	80	13	600	540
APR											
25...	1325	E .00	24000	7.8	30.5	2.4	6.4	93	--	370	420
JUN											
27...	1330	E .00	12600	7.8	29.0	2.4	5.0	68	64	260	K63
AUG											
23...	1230	E .00	12900	7.9	30.0	1.0	11.5	158	280	K150	K64

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
19...	250	2	50	31	31	2	3.2	251	58	88	.30
DEC											
14...	--	--	--	--	--	--	--	341	--	2900	--
MAR , 1984											
01...	--	--	--	--	--	--	--	136	--	--	--
APR											
25...	3000	2700	210	590	4800	39	160	260	1200	9200	.60
JUN											
27...	--	--	--	--	--	--	--	297	--	38	--
AUG											
23...	1300	970	110	240	2400	30	72	292	550	4000	.40

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
19...	26	490	.00	13	.18	.02	.20	.02	.68	.70	.90
DEC											
14...	--	--	--	20	.09	.01	.10	.24	.26	.50	.60
MAR , 1984											
01...	--	--	--	6	--	<.01	.50	<.01	--	.20	.70
APR											
25...	23	16000	.00	10	--	<.01	<.10	.07	.33	.40	--
JUN											
27...	--	--	--	6	--	<.01	<.10	.10	.10	.20	--
AUG											
23...	27	7600	.00	8	--	<.01	<.10	.07	.53	.60	--

E = estimate
K = non-ideal count

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RIO LOCO BASIN

50129700 RIO LOCO AT GUANICA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983 19...	4.0	.23	1	100	1	13	2	<.1	<1	1
DEC 14...	2.7	.15	--	--	--	--	--	--	--	--
MAR , 1984 01...	3.1	.03	--	--	--	--	--	--	--	--
APR 25...	--	.10	1	100	1	3	1	1.5	<1	<1
JUN 27...	--	.10	--	--	--	--	--	--	--	--
AUG 23...	--	.20	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JUN , 1984 27...	1330	<.1	<.01	<.1	<.01	<.01	<.01	<.01

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JUN , 1984 27...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)
JUN , 1984 27...	<.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

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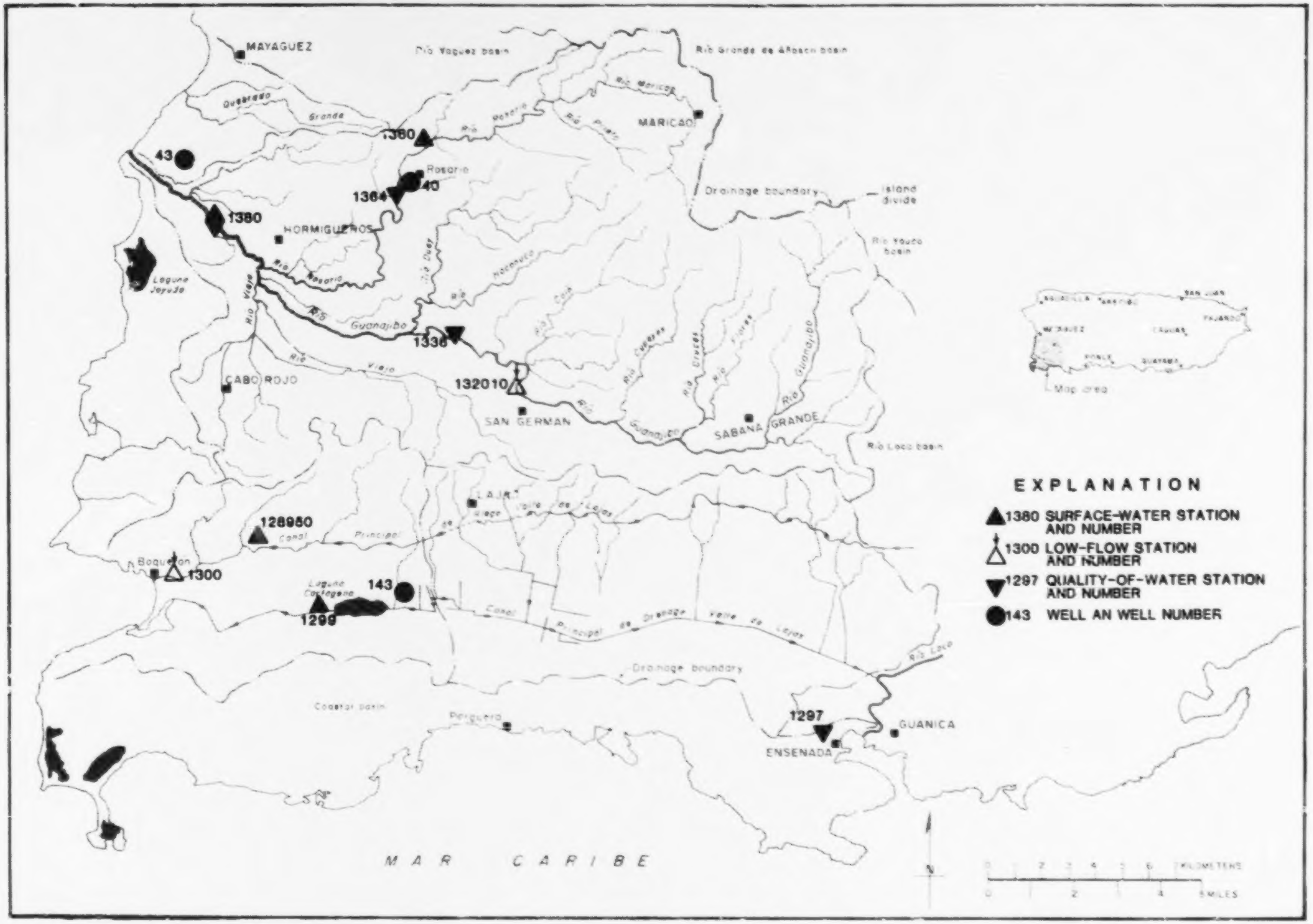
MAYAGUEZ
Río Yaguez basin
Río Grande de Añasco basin
Quebrada Grande
Río Maricao
MARICAO
Río Rosario
Río Prieto
1360
43
Rosario
140
1364
1380
HORMIGUEROS
Drainage boundary
Island divide
Río Yauco basin
Laguna Joyuda
Río Rosario
Río Duey
Río Hoconuco
Río Viejo
Río Guanajibo
1336
Río Cain
Río Cupeyes
Río Cruces
Río Flores
Río Guanajibo
132010
CABO ROJO
Río Viejo
SAN GERMAN
Río Guanajibo
SABANA GRANDE
Río Loco basin
AGUADILLA
ARECIBO
SAN JUAN
FAJARDO
MAYAGUEZ
CAGUAS
PONCE
GUAYAMA
Map area
LAJAS
Riego Valle de Lajas
128950
Canal Principal de
Boqueron
1300
Laguna Cartagena
1299
143
Canal Principal de Drenage Valle de Lajas
Drainage boundary
Río Loco
Coastal basin
Parguera
1297
ENSENADA
GUANICA
MAR CARIBE
N
0 1 2 3 4 5 6 7 KILOMETERS
0 1 2 3 4 5 MILES
EXPLANATION
1380 SURFACE-WATER STATION AND NUMBER
1300 LOW-FLOW STATION AND NUMBER
1297 QUALITY-OF-WATER STATION AND NUMBER
143 WELL AN WELL NUMBER

Figure 22.--Río Guanajibo basin.

LAGUNA CARTAGENA BASIN

50129899 LAGUNA CARTAGENA NEAR BOQUERON, PR

LOCATION.--Lat 18°00'52", long 67°06'33", Hydrologic Unit 21010004, on right bank, 0.6 mi (1.0 km) south of Hacienda Desengaño, and 4.3 mi (6.9 km) southeast of Boquerón.

DRAINAGE AREA.--Indeterminate.

LAKE LEVEL RECORDS

PERIOD OF RECORD.--June to September 1984.

GAGE.--Water-stage recorder. Altitude of gage is 36 ft (11.0 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR CURRENT PERIOD.--Maximum elevation, 11.04 ft (3.365 m) June 11: minimum, 8.09 ft (2.466 m) July 3, 4.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	8.11	8.24	8.64
2									---	8.10	8.25	8.58
3									---	8.09	8.24	8.53
4									---	8.25	8.22	8.49
5									8.13	10.66	8.21	8.56
6									8.16	10.23	8.19	8.58
7									8.19	9.75	8.18	8.55
8									8.17	9.40	8.16	8.50
9									A	9.18	8.14	8.46
10									8.12	9.02	8.12	8.42
11									8.28	8.89	8.11	8.39
12									8.58	8.80	8.20	8.35
13									8.57	8.73	8.17	8.36
14									8.53	8.67	8.19	8.33
15									8.48	8.60	8.21	8.30
16									8.43	8.54	8.22	8.26
17									8.40	8.48	8.23	8.47
18									8.37	8.48	8.22	8.99
19									8.32	8.46	8.20	9.07
20									8.28	8.43	8.14	10.08
21									8.23	8.40	8.13	10.17
22									8.20	8.38	8.12	9.84
23									8.19	8.36	8.11	9.51
24									8.20	8.31	8.11	9.29
25									8.18	8.28	8.12	9.15
26									8.18	8.31	8.13	9.01
27									8.18	8.28	8.12	8.90
28									8.17	8.29	8.11	8.83
29									8.15	8.28	8.11	8.76
30									8.13	8.32	8.35	8.70
31									---	8.29	8.70	---
TOTAL									---	268.42	253.95	264.03
MEAN									---	8.66	8.19	8.80
MAX									---	10.66	8.70	10.17
MIN									---	8.09	8.11	8.26

A No gage-height record.

LAGUNA CARTAGENA BASIN

50129900 LAGUNA CARTAGENA OUTFLOW NEAR BOQUERON, PR

LOCATION.--Lat 18°00'52", long 67°06'34", Hydrologic Unit 21010004, on right bank, 0.6 mi (1.0 km) south of Hacienda Desengaño, and 4.3 mi (6.9 km) southeast of Boquerón.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June to September 1984.

GAGE.--Water-stage recorder. Altitude of gage is 36 ft (11.0 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 60 cu ft/s (1.7 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
June 11	1515	*94	2.662	11.04	3.365
July 5	1715	68	1.926	10.66	3.249
Aug. 30	1615	60	1.699	10.53	3.210

Minimum discharge, 0.13 cu ft/s (0.004 cu m/s) July 3, 4

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	.23	1.1	5.5
2									---	.18	.99	4.6
3									---	.14	.92	4.0
4									---	.49	.82	3.4
5									.38	39	.71	3.3
6									.38	59	.62	4.2
7									.52	37	.52	4.1
8									.51	23	.42	3.6
9									.44	16	.36	3.1
10									.27	12	.27	2.7
11									4.2	9.8	.21	2.3
12									3.5	8.1	.29	2.0
13									4.3	6.8	.48	1.7
14									3.9	5.8	.54	1.7
15									3.4	4.9	.59	1.5
16									2.8	4.2	.75	1.2
17									2.4	3.5	.81	2.9
18									2.1	3.1	.78	7.4
19									1.8	3.0	.67	11
20									1.4	2.8	.43	24
21									1.0	2.4	.28	44
22									.74	2.2	.25	37
23									.56	1.9	.21	26
24									.57	1.6	.19	18
25									.50	1.3	.20	15
26									.49	1.3	.25	12
27									.49	1.3	.25	9.8
28									.48	1.2	.21	8.3
29									.40	1.3	.19	7.2
30									.31	1.4	2.6	5.2
31									---	1.4	4.5	---
TOTAL									---	256.34	21.38	277.7
MEAN									---	8.27	.69	9.26
MAX									---	59	4.5	44
MIN									---	.14	.19	1.2
AC-FT									---	508	42	551

WATER QUALITY RECORDS

PERIOD OF RECORD.--AUGUST TO SEPTEMBER 1984.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
AUG, 10	1231	0.3	468	25.5

RIO GUANAJIBO BASIN

50133600 RIO GUANAJIBO NEAR SAN GERMAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°07'18", long 67°03'56", at bridge on Highway 347, 2.2 mi (3.5 km) northwest of San Germán plaza.

DRAINAGE AREA.--45.5 sq mi (117.8 sq km).

PERIOD OF RECORD.--November 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT, 1983											
20...	0925	33	460	7.8	27.0	4.5	2.5	32	19	K86000	58000
DEC											
15...	0905	22	506	7.8	23.5	1.6	1.2	14	<10	50000	4000
MAR, 1984											
01...	1030	11	653	8.0	24.0	1.4	.0	0	25	K590000	70000
APR											
25...	1010	4.6	332	7.8	25.0	<1.0	.0	0	100	K2200000	K120000
JUN											
27...	1720	11	544	8.1	30.0	2.0	8.2	109	22	2000	K200
AUG											
23...	1630	40	592	8.1	30.0	2.2	9.5	126	<10	23000	K100

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT, 1983											
20...	210	9	23	36	17	.5	1.7	197	23	21	.20
DEC											
15...	--	--	--	--	--	--	--	223	--	--	--
MAR, 1984											
01...	--	--	--	--	--	--	--	280	--	--	--
APR											
25...	270	0	32	46	48	1	4.7	311	55	62	1.9
JUN											
27...	--	--	--	--	--	--	--	234	--	--	--
AUG											
23...	240	0	26	42	24	.7	2.4	239	33	26	.40

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT, 1983											
20...	33	270	24	7	.13	.07	.20	.64	.00	.60	.80
DEC											
15...	--	--	--	8	--	.04	<.10	.87	.63	1.5	--
MAR, 1984											
01...	--	--	--	6	--	<.01	<.10	4.1	2.4	6.5	--
APR											
25...	35	470	6.1	5	--	.01	<.10	10	7.0	17	--
JUN											
27...	--	--	--	10	.52	.48	1.0	1.0	.90	1.9	2.9
AUG											
23...	33	330	36	6	.46	.14	.60	1.1	.60	1.7	2.3

K = non-ideal count

50133600 RIO GUANAJIBO NEAR SAN GERMAN, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
OCT , 1983										
20...	3.5	.27	1	<100	1	9	5	<.1	<1	<1
DEC										
15...	--	.46	--	--	--	--	--	--	--	--
MAR , 1984										
01...	--	.90	--	--	--	--	--	--	--	--
APR										
25...	--	3.4	1	<100	1	17	3	.2	<1	2
JUN										
27...	13	1.4	--	--	--	--	--	--	--	--
AUG										
23...	10	.79	--	--	--	--	--	--	--	--

RIO GUANAJIBO BASIN

50136000 RIO ROSARIO AT ROSARIO, PR

LOCATION.--Lat 18°10'22", long 67°04'31", Hydrologic Unit 21010003, on left bank above low dam, 0.2 mi (0.3 km) below Quebrada Figueroa, 0.7 mi (1.1 km) northeast of Rosario, and 1.6 mi (2.6 km) below Quebrada Palma.

DRAINAGE AREA.--16.4 sq mi (42.5 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1960 to June 1966 (gage-height records only) in files of Puerto Rico Water Resources Authority. June 1975 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 230 ft (70 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE. -9 years (1976-84), 45.1 cu ft/s (1.277 cu m/s), 37.34 in/yr (948 mm/yr), 32,670 acre-ft/yr (40.3 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,800 cu ft/s (957 cu m/s) Sept. 16, 1975, gage height, 19.6 ft (5.97 m), from floodmarks, from rating curve extended above 60 cu ft/s (1.70 cu m/s) on basis of slope-area measurement of peak flow; minimum daily discharge, 2.4 cu ft/s (0.068 cu m/s) June 18, 21, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 cu ft/s (42.5 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 20	1430	2,060	58.3	6.29	1.917	Sept. 18	Unknown	*3,800	108	Unknown	
Nov. 18	1930	2,650	75.0	6.92	2.109						

Minimum discharge, 8.5 cu ft/s (0.241 cu m/s) Apr. 26, May 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	42	55	22	16	16	13	9.0	41	23	48	208
2	24	39	49	21	16	19	12	9.4	32	20	46	166
3	24	62	46	20	15	16	11	11	36	22	40	232
4	29	147	44	20	16	16	14	11	194	20	41	170
5	31	99	43	21	15	15	13	10	179	190	39	71
6	31	65	41	20	14	14	11	10	105	125	33	65
7	31	104	39	23	15	14	15	10	38	53	31	50
8	32	85	39	32	15	14	22	9.5	31	43	30	54
9	27	67	37	42	51	14	15	9.3	29	38	29	71
10	28	121	35	29	40	13	11	8.7	26	36	27	78
11	41	136	34	27	23	13	11	8.8	64	53	27	89
12	58	84	32	22	24	14	9.9	9.5	54	39	28	80
13	113	73	30	20	34	13	9.8	14	38	34	27	129
14	81	120	30	20	53	12	9.7	14	30	70	29	132
15	134	101	29	20	53	12	9.6	25	27	46	45	56
16	97	76	26	28	27	12	9.4	29	25	35	35	48
17	165	65	27	21	21	12	10	113	25	72	27	128
18	127	301	27	20	19	12	12	112	25	128	24	440
19	77	163	28	19	18	12	11	66	24	101	132	170
20	278	90	33	19	17	11	9.8	51	23	74	125	232
21	158	82	38	18	16	12	12	124	23	81	77	215
22	99	69	3	18	16	12	12	96	22	65	67	109
23	139	61	30	23	16	12	9.6	171	21	59	63	78
24	80	55	28	19	16	11	9.2	216	20	57	60	64
25	63	53	25	18	15	11	9.0	104	20	50	84	58
26	56	52	24	17	15	12	23	75	19	44	79	54
27	49	51	27	17	15	12	27	127	19	47	100	56
28	45	51	24	17	15	11	12	219	19	86	70	84
29	74	51	23	16	15	11	9.8	220	18	74	114	106
30	55	60	22	16	---	11	9.3	104	25	50	130	69
31	45	---	21	16	---	11	---	57	---	45	200	---
TOTAL	2297	2625	1022	661	641	400	372.1	2053.2	1252	1880	1907	3562
MEAN	74.1	87.5	33.0	21.3	22.1	12.9	12.4	66.2	41.7	60.6	61.5	119
MAX	278	301	55	42	53	19	27	220	194	190	200	440
MIN	24	39	21	16	14	11	9.0	8.7	18	20	24	48
CFSM	4.52	5.34	2.01	1.30	1.35	.79	.76	4.04	2.54	3.70	3.75	7.26
IN.	5.21	5.95	2.32	1.50	1.45	.91	.84	4.66	2.84	4.26	4.33	8.08
AC-FT	4560	5210	2030	1310	1270	793	738	4070	2480	3730	3780	7070

CAL YR 1983 TOTAL 15402.7 MEAN 42.2 MAX 433 MIN 8.1 CFSM 2.57 IN 34.96 AC-FT 30550
WTR YR 1984 TOTAL 18672.3 MEAN 51.0 MAX 440 MIN 8.7 CFSM 3.11 IN 42.35 AC-FT 37040

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RIO GUANAJIBO BASIN

50136000 RIO ROSARIO AT ROSARIO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--OCTOBER 1952 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT, 05	1624	31	259	22.0
NOV, 09	1035	67	218	24.0
DEC, 09	0917	38	244	21.5
JAN, 14	0945	20	238	22.0
FEB, 07	1032	27	250	23.5
MAR, 06	1419	14	252	25.5
APR, 05	1457	12	268	28.0
MAY, 16	1054	23	218	25.0
JUN, 07	1038	68	201	23.0
JUL, 12	1205	46	216	25.0
AUG, 07	1345	29	255	27.5

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RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°09'36", long 67°05'08", at bridge on Highway 348, 0.5 mi (0.8 km) southwest of Rosario plaza.

DRAINAGE AREA.--18.3 sq mi (47.4 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
20...	1200	53	255	8.2	25.5	25	8.4	103	21	K1800	1400
DEC											
15...	1125	31	278	8.3	22.5	1.1	9.2	107	<10	K150	270
FEB , 1984											
29...	1305	16	272	7.8	26.0	2.1	11.2	138	12	K18	89
APR											
24...	1705	9.7	300	8.7	29.0	6.0	9.4	123	<10	K120	K260
JUN											
28...	1600	26	272	8.5	26.0	2.4	12.0	149	12	45000	10000
AUG											
24...	1550	--	288	8.5	23.0	1.2	9.0	103	<10	K670	660

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
20...	120	0	22	15	6.7	.3	1.2	121	7.7	6.6	<.10
DEC											
15...	--	--	--	--	--	--	--	126	--	--	--
FEB , 1984											
29...	--	--	--	--	--	--	--	137	--	--	--
APR											
24...	130	0	25	15	9.7	.4	1.1	131	7.5	9.4	.10
JUN											
28...	--	--	--	--	--	--	--	124	--	--	--
AUG											
24...	120	0	23	15	7.3	.3	1.1	133	7.3	7.5	<.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
20...	23	160	23	5	.77	.03	.80	<.01	--	.90	1.7
DEC											
15...	--	--	--	4	--	<.01	.80	.03	.27	.30	1.1
FEB , 1984											
29...	--	--	--	5	--	<.01	.50	<.01	--	.30	.80
APR											
24...	30	180	4.6	4	--	<.01	.30	.02	.38	.40	.70
JUN											
28...	--	--	--	4	--	<.01	.40	.04	.26	.30	.70
AUG											
24...	28	170	--	3	--	<.01	.50	.01	.19	.20	.70

K = non-ideal count

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RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
20...	7.5	.05	1	<100	1	13	2	<.1	<1	<1
DEC										
15...	4.9	.06	--	--	--	--	--	--	--	--
FEB , 1984										
29...	3.5	.01	-	--	--	--	--	--	--	--
APR										
24...	3.1	.06	1	<100	<1	4	<1	.1	<1	<1
JUN										
28...	3.1	.06	--	--	--	--	--	--	--	--
AUG										
24...	3.1	.03	--	--	--	--	--	--	--	--

RIO GUANAJIBO BASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR

LOCATION.--Lat 18°08'36", long 67°0ː'57", Hydrologic Unit 21010003, at bridge on Highway 100, 1.4 mi (2.3 km) west of Hormigueros, and 2.0 mi (3.2 km) downstream from Río Rosario.

DRAINAGE AREA.--120 sq mi (311 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Annual low-flow measurements 1959, monthly measurements April 1959 to November 1967, January 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Previous to Nov. 7, 1980, at site 0.3 mi (0.5 km) upstream at datum 7.36 ft (2.243 m) higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--11 years (1974-84), 219 cu ft/s (6.202 cu m/s), 24.78 in/yr (629 mm/yr), 158,700 acre-ft/yr (196 cu hm/yr); median of yearly mean discharges, 210 cu ft/s (5.95 cu m/s), 152,000 acre-ft/yr (187 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 128,000 cu ft/s (3,625 cu m/s) Sept. 16, 1975, gage height, 28.50 ft (8.687 m), site and datum then in use, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on the basis of contracted-opening measurement of peak flow; minimum, 4.6 cu ft/s (0.130 cu m/s) June 22, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 cu ft/s (56.6 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 18	unknown	3,000	85.0	unknown		Sept. 14	0115	2,010	56.9	18.44	5.620
July 5	2115	2,240	63.4	19.07	5.812	Sept. 18	0530	*5,230	148	21.78	6.638

Minimum discharge, 12 cu ft/s (0.340 cu m/s) Apr. 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	192	134	57	44	37	23	19	119	77	217	795
2	89	189	114	56	42	57	23	19	100	62	192	606
3	81	293	107	51	40	38	23	18	124	70	138	922
4	84	904	105	53	40	37	26	25	225	62	122	1220
5	91	881	110	69	42	35	26	21	555	1380	114	412
6	82	406	101	72	42	35	22	19	337	833	105	363
7	83	719	94	76	41	33	21	20	172	279	98	257
8	76	878	91	130	44	32	31	18	128	205	93	285
9	75	578	87	203	375	31	26	17	107	175	91	412
10	98	800	93	117	410	30	22	16	95	162	88	464
11	127	920	97	98	124	31	20	16	360	273	87	541
12	148	510	101	237	111	30	18	17	286	179	84	472
13	210	420	82	280	95	30	16	32	175	147	85	961
14	218	790	77	143	83	29	17	50	118	240	82	908
15	312	640	93	126	280	29	17	65	99	180	86	304
16	278	460	97	129	100	28	16	176	91	141	96	239
17	541	365	113	110	66	39	15	111	90	140	79	850
18	458	2300	136	100	56	31	18	324	91	234	77	3460
19	277	1950	106	92	50	28	17	249	85	286	374	1190
20	509	560	137	84	45	26	17	99	78	315	416	1740
21	635	278	174	76	40	26	19	196	77	191	165	1360
22	465	247	146	77	40	25	23	342	72	205	124	700
23	609	213	142	104	38	26	17	254	66	252	112	477
24	303	198	106	83	37	25	14	531	63	164	103	378
25	218	178	91	65	36	24	13	579	59	139	99	313
26	189	163	86	58	36	24	21	184	58	122	116	283
27	169	151	91	54	35	27	78	192	54	194	109	341
28	181	137	71	51	35	24	38	528	56	225	104	323
29	406	127	66	49	36	22	27	672	52	227	112	259
30	320	121	62	48	---	20	22	279	88	143	608	225
31	216	---	58	46	---	20	---	154	---	125	1090	---
TOTAL	7646	15748	3158	2992	2463	929	686	5240	4078	7427	5444	20960
MEAN	247	525	102	96.5	84.9	30.0	22.9	169	136	240	176	699
MAX	635	2300	174	280	410	57	78	672	555	1380	1090	3460
MIN	75	121	58	46	35	20	13	16	52	62	77	225
CFSM	2.06	4.38	.85	.80	.71	.25	.19	1.41	1.13	2.00	1.47	5.83
IN.	2.37	4.88	.98	.93	.76	.29	.21	1.62	1.26	2.30	1.69	6.50
AC-FT	15170	31240	6260	5930	4890	1840	1360	10390	8090	14730	10800	41570

CAL YR 1983 TOTAL 60016 MEAN 164 MAX 2300 MIN 16 CFSM 1.37 IN 18.60 AC-FT 119000
WTR YR 1984 TOTAL 76771 MEAN 210 MAX 3460 MIN 13 CFSM 1.75 IN 23.80 AC-FT 152300

RIO GUANAJIBO BASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
19...	1525	263	312	7.8	26.5	71	4.9	61	14	20000	21000
DEC											
14...	1415	77	458	8.0	24.5	3.8	6.0	72	<10	57000	6300
FEB , 1984											
29...	1615	36	470	8.0	26.0	9.5	6.0	74	10	K9700	6000
APR											
24...	1155	14	510	8.2	28.0	20	5.7	73	16	K1700	K180
JUN											
28...	1115	54	442	8.2	27.0	15	7.8	98	17	330	K150
AUG											
24...	1040	102	395	7.9	27.5	5.6	4.2	53	20	23000	5100

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
19...	140	11	22	21	9.4	.4	2.3	131	19	10	.10
DEC											
14...	--	--	--	--	--	--	--	200	--	--	--
FEB , 1984											
29...	--	--	--	--	--	--	--	226	--	--	--
APR											
24...	210	0	32	32	19	.6	2.4	218	17	21	.30
JUN											
28...	--	--	--	--	--	--	--	185	--	--	--
AUG											
24...	160	0	27	23	13	.5	2.8	162	21	15	.20

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
19...	25	190	133	39	.56	.04	.60	.10	.90	1.0	1.6
DEC											
14...	--	--	--	8	.74	.06	.80	.25	.25	.50	1.3
FEB , 1984											
29...	--	--	--	10	.94	.06	1.0	.24	.36	.60	1.6
APR											
24...	34	290	11	27	.62	.08	.70	.52	1.2	1.7	2.4
JUN											
28...	--	--	--	18	.77	.03	.80	.33	.07	.40	1.2
AUG											
24...	25	220	62	38	.38	.02	.40	.29	.61	.90	1.3

K = non-ideal count

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RIO GUANAJIBO EASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
19...	7.1	.30	1	100	1	50	2	<.1	<1	3
DEC										
14...	5.9	.30	--	--	--	--	--	--	--	--
FEB , 1984										
29...	7.1	.53	--	--	--	--	--	--	--	--
APR										
24...	11	.69	1	100	1	9	<1	.3	<1	<1
JUN										
28...	5.3	.44	--	--	--	--	--	--	--	--
AUG										
24...	5.9	.44	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JUN , 1984								
28...	1115	<.1	<.01	<.1	<.01	<.01	<.01	.01

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JUN , 1984									
28...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)
JUN , 1984								
28...	<.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

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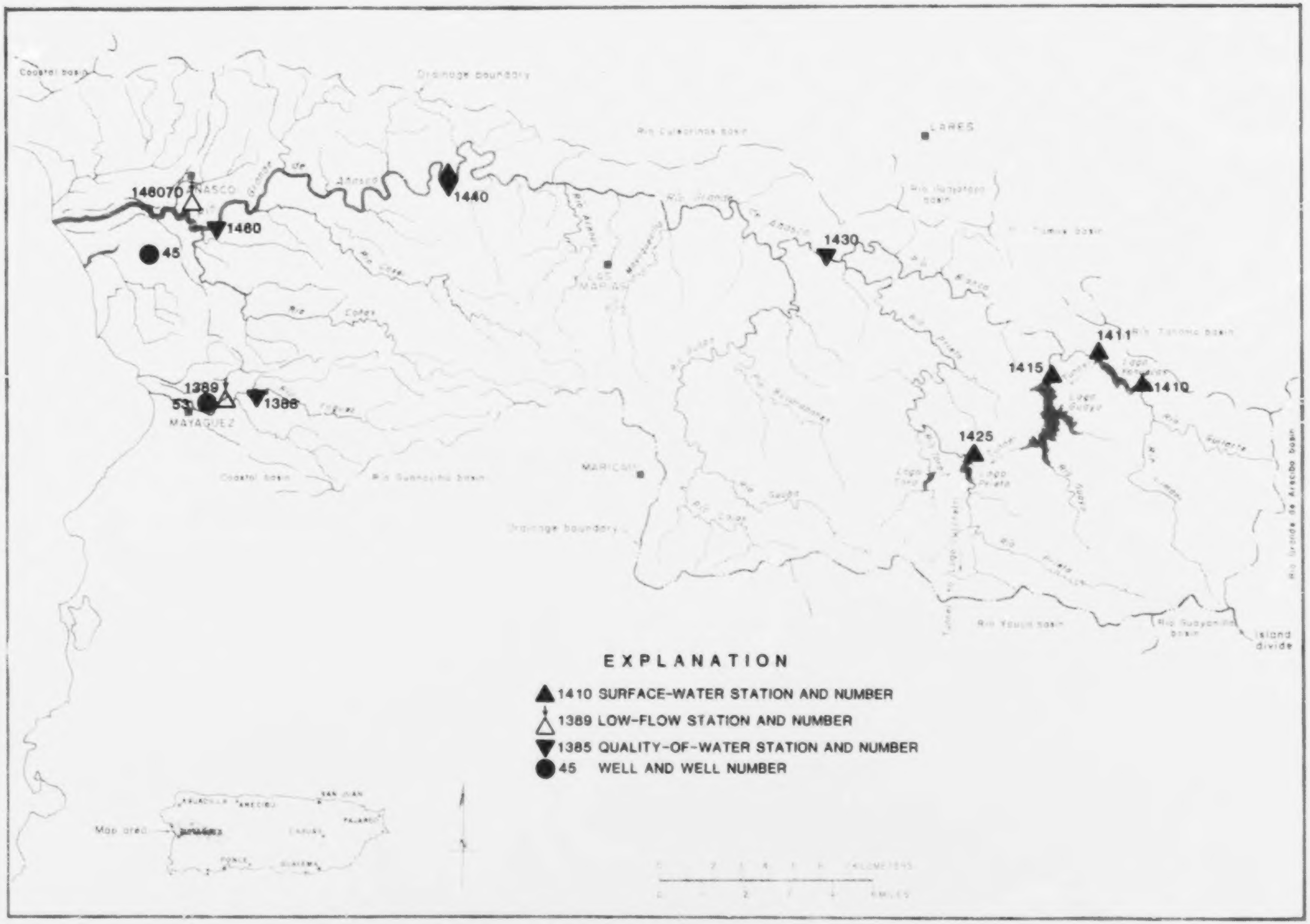
Coastal basin
Drainage boundary
Rio Culebrinas basin
LARES
146070
AÑASCO
Grande
de
Añasco
1440
1460
45
Rio Casei
Rio Arenas
LAS MARIAS
1430
Rio Grande
de Añasco
Rio Guajataca basin
Rio Tumias basin
Rio Blanco
Rio Prieto
1411
Rio Tanama basin
1415
Lago Guayo
1410
Rio Cañas
Rio Yagüez
1389
53
1386
MAYAGUEZ
Rio Guanajibo basin
Coastal basin
MARICAO
Drainage boundary
1425
Lago Toro
Lago Prieto
Rio Guilarte
Rio Limon
Rio Grande de Arecibo basin
Rio Prieto
Rio Yauco basin
Rio Guayanilla basin
Island divide
EXPLANATION
1410 SURFACE-WATER STATION AND NUMBER
1389 LOW-FLOW STATION AND NUMBER
1385 QUALITY-OF-WATER STATION AND NUMBER
45 WELL AND WELL NUMBER
Map area
SAN JUAN
AGUADILLA
ARECIBO
MAYAGUEZ
CAGUAS
PONCE
GUAYAMA
KILOMETERS
MILES

Figure 23.--Río Yagüez and Río Grande de Añasco basins.

RIO YAGUEZ BASIN

50138800 RIO YAGUEZ NEAR MAYAGUEZ, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°12'31", long 67°07'07", at steel-truss bridge on unnumbered paved road about 800 ft (244 m) south of Highway 106, 1.8 mi (2.9 km) west of Highways 106 and 352 junction, and 1.4 mi (2.3 km) east-northeast from Mayaguez plaza.

DRAINAGE AREA.--6.7 sq mi (17.3 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
21...	0825	39	189	7.9	23.0	50	8.2	96	<10	3800	4800
DEC											
15...	1335	8.0	305	8.2	23.0	1.6	8.6	100	<10	K290	720
MAR , 1984											
01...	0740	2.0	311	8.1	20.5	1.1	8.3	92	<10	230	2500
APR											
23...	1655	1.3	328	8.3	26.5	<1.0	8.7	108	10	K730	6500
JUN											
29...	0955	9.8	304	8.3	24.0	3.6	14.8	175	14	K650	2500
AUG											
29...	0750	6.6	263	8.1	23.5	3.0	7.8	92	<10	K1700	3900

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
21...	77	0	20	6.6	7.3	.4	2.0	84	5.9	6.2	.10
DEC											
15...	--	--	--	--	--	--	--	137	--	--	--
MAR , 1984											
01...	--	--	--	--	--	--	--	146	--	--	--
APR											
23...	130	0	34	10	13	.5	2.3	139	10	11	.10
JUN											
29...	--	--	--	--	--	--	--	128	--	--	--
AUG											
29...	100	0	27	8.3	9.3	.4	2.1	111	8.4	9.4	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
21...	22	120	13	20	1.3	.03	1.3	.03	.27	.30	1.6
DEC											
15...	--	--	--	6	--	<.01	.80	.04	.26	.30	1.1
MAR , 1984											
01...	--	--	--	5	--	<.01	.50	<.01	--	<.10	--
APR											
23...	29	190	.70	<1	--	<.01	.20	<.01	--	.30	.50
JUN											
29...	--	--	--	3	--	<.01	.60	.04	.16	.20	.80
AUG											
29...	23	150	2.8	11	--	<.01	.90	.01	.19	.20	1.1

K = non-ideal count

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50138800 RIO YAGUEZ NEAR MAYAGUEZ, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
21...	7.1	.06	1	200	1	50	2	<.1	<1	2
DEC										
15...	4.9	.05	--	--	--	--	--	--	--	--
MAR , 1984										
01...	--	<.01	--	--	--	--	--	--	--	--
APR										
23...	2.2	.04	1	200	<1	2	<1	.1	<1	<1
JUN										
29...	3.5	.04	--	--	--	--	--	--	--	--
AUG										
29...	4.9	.02	--	--	--	--	--	--	--	--

RIO GRANDE DE AÑASCO BASIN

50141000 RIO BLANCO NEAR ADJUNTAS, PR

LOCATION.--Lat 18°12'19", long 66°48'01", Hydrologic Unit 21010003, on right bank near dirt road off Highway 129, 0.4 mi (0.6 km) north-northwest of Highways 129 and 135 junction, 2.5 mi (4 km) northeast of Castañer, 2.3 mi (3.7 km) east-southeast of Lago Guayo Dam, and 0.5 mi (0.8 km) upstream from Río Limani.

DRAINAGE AREA.--15.4 sq mi (40.1 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1946 to December 1966 in reports of the Puerto Rico Water Resources Authority as "Río Yahuecas near Adjuntas"; June 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is about 1,530 ft (466 m) from USGS topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--24 years (1947-66, 1981-84), 37.2 cu ft/s (1.054 cu m/s), 32.80 in/yr (833 mm/yr), 27,000 acre-ft/yr (33.3 cu hm/yr); median of yearly mean discharges, 36 cu ft/s (1.02 cu m/s), 26,100 acre-ft/yr (32 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,000 cu ft/s (481 cu m/s) Oct. 13, 1954, gage height unknown, minimum, 4.4 cu ft/s (0.125 cu m/s) Apr. 23, 25, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 cu ft/s (48.1 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 20	1545	2,810	79.6	11.35	3.459	Sept. 13	1615	3,660	104	12.10	3.688
Oct. 22	1445	1,720	48.7	10.19	3.106	Sept. 17	1615	*5,210	148	13.27	4.045
Oct. 22	1615	4,780	135	12.97	3.953	Sept. 18	1700	3,930	111	12.32	3.755

Minimum discharge, 4.4 cu ft/s (0.125 cu m/s) Apr. 23, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	31	27	16	9.4	9.9	8.7	6.6	16	12	17	46
2	19	28	23	15	9.0	9.6	9.1	6.4	15	11	13	188
3	16	56	21	15	8.8	9.1	8.1	6.1	108	11	11	229
4	23	269	21	18	9.0	9.0	8.7	6.1	175	13	12	80
5	16	110	20	29	8.8	8.9	7.7	5.9	58	49	13	42
6	14	58	21	18	8.1	8.9	7.3	6.0	40	18	11	39
7	13	49	20	18	8.0	8.4	7.2	6.1	29	13	9.9	29
8	12	47	20	100	10	8.1	6.9	6.2	22	12	9.6	35
9	15	39	19	30	68	8.1	6.5	6.0	19	12	9.3	44
10	17	123	18	21	28	8.3	6.3	5.8	17	11	9.0	86
11	14	109	18	19	19	8.1	6.7	6.0	53	13	8.9	166
12	25	56	20	18	19	8.0	6.5	11	101	12	9.4	110
13	22	42	19	17	15	7.8	7.8	10	42	11	11	468
14	16	59	18	17	14	7.7	6.8	7.2	26	15	8.9	138
15	17	43	18	16	12	7.9	6.2	28	21	15	9.2	80
16	62	35	18	15	12	7.9	5.9	54	27	11	8.9	90
17	96	32	18	14	11	8.6	5.7	22	22	11	8.6	549
18	41	32	19	14	11	8.3	5.4	26	19	15	8.3	574
19	26	30	17	13	11	8.1	5.3	14	19	46	8.2	244
20	269	28	17	13	11	17	5.2	9.7	17	28	8.2	311
21	120	27	19	13	10	14	5.3	14	16	17	7.8	160
22	569	26	22	12	10	9.2	5.5	80	15	17	7.7	103
23	121	25	18	12	9.9	9.7	5.0	48	15	15	7.6	79
24	56	24	17	12	10	8.5	5.0	33	14	12	7.4	67
25	41	24	17	11	10	8.4	4.9	27	13	12	17	59
26	34	23	17	11	9.9	8.4	23	27	13	11	36	53
27	30	22	17	11	9.8	8.8	18	19	13	12	25	60
28	28	22	17	11	9.7	8.6	9.5	38	12	36	13	52
29	142	21	17	10	9.8	7.7	7.5	51	12	26	13	45
30	48	31	16	9.6	---	7.6	6.8	31	12	15	12	50
31	39	---	16	9.5	---	7.5	---	19	---	13	41	---
TOTAL	1980	1521	585	558.1	391.2	276.1	228.5	636.1	981	523	391.9	4276
MEAN	63.9	50.7	18.9	18.0	13.5	8.91	7.62	20.5	32.7	16.9	12.6	143
MAX	569	269	27	100	68	17	23	80	175	49	41	574
MIN	12	21	16	9.5	8.0	7.5	4.9	5.8	12	11	7.4	29
CFSM	4.15	3.29	1.23	1.17	.88	.58	.50	1.33	2.12	1.10	.82	9.29
IN.	4.78	3.67	1.41	1.35	.94	.67	.55	1.54	2.37	1.26	.95	10.33
AC-FT	3930	3020	1160	1110	776	548	453	1260	1950	1040	777	8480

CAL YR 1983 TOTAL 9166.2 MEAN 25.1 MAX 576 MIN 6.2 CFSM 1.63 IN 22.14 AC-FT 18180
WTR YR 1984 TOTAL 12347.9 MEAN 33.7 MAX 574 MIN 4.9 CFSM 2.19 IN 29.83 AC-FT 24490

RIO GRANDE DE AÑASCO BASIN

50141000 RIO BLANCO NEAR ADJUNTAS, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--MARCH 1944 TO DECEMBER 1966 IN REPORTS OF THE PUERTO RICO WATER RESOURCES AUTHORITY AS "RIO YAHUECAS NEAR ADJUNTAS", JUNE 1980 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 04	1140	37	227	21.0	APR, 04	0930	9.3	261	20.5
NOV, 03	1030	29	241	23.0	MAY, 03	1151	6.4	256	24.0
DEC, 05	1347	20	240	23.5	JUN, 05	0943	54	195	22.5
JAN, 11	0914	19	224	19.0	JUL, 10	1050	11	242	24.0
FEB, 07	1115	8.4	241	21.5	AUG, 07	1107	9.9	239	24.0
MAR, 02	1137	9.9	239	22.5					

RIO GRANDE DE AÑASCO BASIN

50141100 LAGO YAHUECAS NEAR CASTAÑER, PR

LOCATION.--Lat 18°13'20", long 66°49'15", Hydrologic Unit 21010003, at Yahuecas Dam on Río Blanco, 1.1 mi (1.8 km) northeast of Lago Guayo, 2.8 mi (4.5 km) northeast of Castañer, 3.8 mi (6.1 km) northeast of Lago Prieto, and about 4 mi (6 km) northwest of Adjuntas.

DRAINAGE AREA.--17.4 sq mi (45.1 sq km).

ELEVATION RECORDS

PERIOD OF RECORD.--April 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) above mean sea level.

REMARKS.--Lago Yahuecas was completed in 1956. The dam is a unit of the southwestern Puerto Rico project and provides a maximum storage of 1,800 ac-ft (2.22 cu hm) for power and irrigation. The dam is a concrete gravity structure with a total length of 450 ft (137.2 m), a maximum structural height of 90 ft (27.4 m), and a maximum base width of 60 ft (18.3 m). The spillway is an ungated overflow type with a crest elevation of 71.00 ft (21.641 m) and a crest length of 200 ft (61.0 m); It was designed to pass a maximum flood of 38,000 cu ft/s (1,076 cu m/s) at a reservoir elevation of 84.00 ft (25.603 m). Timber flashboards, originally installed on the spillway crest, were subsequently removed and their use discontinued. Diversions are conveyed to Lago Guayo by an 11 ft (3.4 m) diameter, 6,470 ft (1,972 m) long tunnel, mostly unlined.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 76.61 ft (23.351 m) Sept. 13, 1982; minimum, 46.67 ft (14.225 m) Sept. 9, 1984.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 72.45 ft (22.083 m) Oct. 22; minimum, 46.67 ft (14.225 m) Sept. 9.

Capacity table (elevation, in feet, and contents, in acre-feet)
(based on data from Puerto Rico Water Resources Authority)

30	0	65	1,000
49	393	71	1,308
60	778	75	1,540

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54.07	57.65	58.10	59.64	54.88	52.85	A	52.51	51.77	51.58	52.78	55.45
2	53.89	56.23	58.02	59.87	54.82	52.83		52.42	51.57	51.53	52.63	61.48
3	57.94	59.12	58.07	60.21	54.82	52.56	A	52.56	58.28	51.52	52.50	63.55
4	54.07	66.84	58.31	60.45	54.97	52.74	52.58	52.53	59.01	51.61	53.04	56.46
5	53.97	63.15	58.55	A	55.10	52.26	52.62	51.86	54.66	53.41	52.83	56.36
6	54.06	61.46	58.74		55.26	52.30	52.60	51.45	53.81	52.66	52.50	55.44
7	54.06	61.44	58.95		55.28	52.13	52.66	51.57	52.09	52.50	52.80	51.97
8	54.15	60.68	58.45		55.66	51.98	52.68	51.79	51.35	52.52	52.54	47.26
9	54.36	59.91	58.51		57.98	51.78	52.40	51.33	51.11	52.47	52.54	A
10	55.04	62.81	58.60	A	56.87	A	52.53	50.95	50.98	52.40	52.55	
11	54.52	63.50	58.75	58.85	57.14		52.59	50.54	53.29	52.71	52.57	
12	55.15	61.45	58.89	58.02	57.46		52.62	52.68	57.46	52.30	52.72	
13	55.19	60.85	58.98	58.23	57.65		52.64	51.93	54.36	52.24	52.66	
14	54.29	61.93	58.44	58.37	56.39		52.48	51.19	53.43	53.19	52.53	
15	55.20	60.61	58.90	58.15	55.43		52.42	55.04	53.14	52.44	52.76	
16	57.53	60.07	58.15	57.48	56.95		52.49	54.76	54.98	52.33	52.50	
17	59.38	59.42	58.22	57.49	55.07		52.52	52.63	53.40	52.45	52.47	
18	54.67	58.99	58.56	57.70	55.13		52.41	54.41	53.02	52.83	52.46	
19	54.46	58.82	57.91	57.83	55.00		52.52	51.56	53.00	56.43	52.56	
20	64.83	58.95	57.56	58.00	54.90		52.22	51.28	52.97	52.51	52.46	
21	59.42	58.43	57.42	58.29	54.76		52.07	52.06	52.00	52.85	52.44	
22	71.03	58.29	57.58	58.33	54.46		52.23	56.55	52.01	52.54	52.45	
23	63.61	57.88	57.96	58.59	54.44		52.32	54.14	51.92	52.38	52.46	
24	60.58	58.06	57.99	57.90	54.21		52.14	54.37	51.86	52.30	52.49	
25	59.40	57.69	58.20	57.69	53.79		52.10	52.13	51.85	52.30	54.54	
26	58.62	57.16	58.41	57.14	53.65		54.88	53.26	51.87	52.26	56.04	
27	57.79	57.28	58.71	56.57	53.29		52.64	53.05	51.95	52.70	52.81	
28	56.96	57.55	58.93	56.46	53.36		52.49	55.46	51.96	55.75	52.38	
29	62.81	57.82	59.05	56.59	53.29		52.51	56.74	51.79	52.73	53.04	
30	59.59	58.77	59.24	55.64	---	A	52.49	53.59	51.74	52.54	52.47	A
31	58.90	---	59.48	55.52	---	---	---	53.06	---	52.41	56.18	---
MEAN	57.40	59.76	58.44	---	55.17	---	---	52.88	53.11	52.66	52.89	---
MAX	71.03	66.84	59.48	---	57.98	---	---	56.74	59.01	56.43	56.18	---
MIN	53.89	56.23	57.42	---	53.29	---	---	50.54	50.98	51.52	52.38	---

A No gage-height record.

RIO GRANDE DE AÑASCO BASIN

50141500 LAGO GUAYO NEAR CASTAÑER, PR

LOCATION.--Lat 18°12'46", long 66°50'06", Hydrologic Unit 21010003, at Guayo Dam on Río Guayo, 1.1 mi (1.8 km) southwest of Lago Yahuecas, 2.6 mi (4.2 km) southwest of Lago Prieto, 2.1 mi (3.4 km) north of Castañer, and 6.0 mi (9.6 km) west of Adjuntas.

DRAINAGE AREA.--9.60 sq mi (24.9 sq km).

ELEVATION RECORDS

PERIOD OF RECORD.--April 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) above mean sea level.

REMARKS.--Lago Guayo was completed in 1956. The dam is on Río Guayo and is the largest in the southwestern Puerto Rico project. The maximum storage is 17,400 ac-ft (21.5 cu hm) for power and irrigation. The dam is a concrete gravity structure with a total length of 555 ft (169.2 m), a maximum structural height of 190 ft (57.9 m), and a maximum width at the base of 145 ft (44.2 m). The ungated overflow spillway with a crest elevation of 60.00 ft (18.288 m) and a crest length of 220 ft (67.1 m) was designed to pass a maximum flood of 30,200 cu ft/s (855 cu m/s) at a reservoir elevation of 70.00 ft (21.336 ft). Timber flashboards that were added to increase storage capacity were subsequently removed and their use discontinued.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 62.43 ft (19.029 m) May 27, 1980; minimum, 28.62 ft (8.723 m) May 2, 1984.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 60.89 ft (18.559 m) Nov. 20; minimum, 28.62 ft (8.723 m) May 2.

Capacity table (elevation, in feet, and contents, in acre-feet)
(based on data from Puerto Rico Water Resources Authority)

30	6,530	60	13,550
49	10,660	65	15,000

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47.68	56.51	57.72	A	55.11	50.19	35.42	B	37.31	41.84	41.96	A
2	47.90	55.26	57.59	│	A	49.74	34.74	│	37.34	40.86	42.15	│
3	47.96	56.40	57.76	│	│	49.66	B	│	38.31	40.07	41.97	│
4	47.76	58.51	58.11	│	│	49.80	│	│	41.32	40.26	42.18	│
5	47.12	60.35	58.40	│	│	49.95	│	│	42.68	40.77	42.40	│
6	46.48	59.87	58.39	│	│	49.68	│	│	43.35	41.05	41.69	│
7	45.79	59.56	58.72	│	A	48.34	│	│	43.83	41.30	40.90	│
8	44.89	59.11	58.08	│	55.45	47.61	│	│	43.65	41.53	41.03	│
9	45.24	58.62	58.32	│	56.18	47.76	│	│	43.95	41.57	40.66	│
10	45.61	59.40	58.41	A	56.69	47.86	│	│	44.22	40.04	40.74	A
11	44.40	60.35	58.58	58.75	56.99	47.22	│	│	43.93	40.04	41.03	55.37
12	43.76	60.26	58.57	57.93	57.29	45.48	│	│	44.10	40.47	41.17	55.62
13	43.58	60.37	58.86	58.15	57.51	44.03	│	│	44.84	40.35	41.07	58.01
14	42.24	60.39	58.15	58.25	56.26	43.13	│	│	44.87	40.44	A	58.45
15	42.36	59.67	58.03	58.06	55.22	43.29	│	│	45.16	40.94	│	58.03
16	43.24	59.37	57.78	57.43	54.73	42.96	│	│	45.61	41.01	│	58.67
17	45.39	58.77	57.91	57.46	54.91	43.12	│	│	45.95	41.17	│	60.82
18	45.38	58.45	58.22	57.65	55.00	43.26	│	│	45.30	41.40	│	60.54
19	45.04	58.10	57.32	57.84	54.80	41.55	│	│	44.71	41.19	│	60.09
20	47.78	58.35	57.10	57.98	54.59	40.81	│	│	44.97	41.17	│	60.69
21	51.05	58.05	57.02	58.09	54.58	40.54	│	│	45.11	41.52	│	60.45
22	55.22	57.85	57.37	56.39	54.32	40.71	│	B	45.34	41.85	│	60.34
23	58.30	57.13	57.65	56.24	54.10	39.83	│	34.21	45.56	41.09	│	60.29
24	58.86	57.67	57.77	56.42	53.85	38.91	│	35.77	45.50	40.48	│	60.04
25	58.28	56.97	58.02	55.64	53.14	38.83	│	36.39	43.29	40.71	│	60.19
26	57.71	56.30	58.26	55.59	52.48	38.10	│	36.97	43.47	40.73	│	60.00
27	56.72	56.73	58.49	54.71	52.62	37.38	│	37.37	43.64	40.89	│	60.02
28	55.80	57.11	58.71	54.70	52.56	36.31	│	37.95	43.82	41.42	│	59.97
29	57.42	57.42	A	54.74	51.34	35.36	│	38.85	42.05	42.01	│	59.65
30	58.60	57.41	│	54.78	---	35.41	B	38.22	41.67	41.88	│	59.29
31	57.77	---	A	54.96	---	35.19	---	37.80	---	41.67	A	---
MEAN	49.53	58.38	---	---	---	43.29	---	---	43.49	41.02	---	---
MAX	58.86	60.39	---	---	---	50.19	---	---	45.95	42.01	---	---
MIN	42.24	56.26	---	---	---	35.19	---	---	37.31	40.04	---	---

A No gage-height record.
B Stage below elevation 34.05 ft.

RIO GRANDE DE AÑASCO BASIN

50142500 LAGO PRIETO NEAR CASTAÑER, PR

LOCATION.--Lat 18°11'08", long 66°51'48", Hydrologic Unit 21010004, at dam on Río Prieto, 2.0 mi (3.2 km) west of Castañer, 3.1 mi (5.0 km) southwest of Lago Guayo, 3.8 mi (6.1 km) southwest of Lago Yahuecas, and about 9 mi (14 km) west of Adjuntas.

DRAINAGE AREA.--9.60 sq mi (24.9 sq km).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) above mean sea level.

REMARKS.--Lago Prieto was completed in 1955. It provides a maximum storage of approximately 700 ac-ft (0.863 cu hm) for power and irrigation. A power tunnel adit from the reservoir to the Lago Guayo tunnel allows for releases to Power Plant No. 1. Turbine releases are collected in Lago Antonio Lucchetti and are reused for power generation at Power Plant No. 2. The dam is a concrete gravity structure with a total length of 260 ft (79.2 m), a maximum structural height of 98 ft (29.9 m), and a maximum base width of 65 ft (19.8 m). The ungated overflow spillway, with a crest elevation of 85.00 ft (25.908 m), and a crest length of 170 ft (51.8 m) was designed to pass a maximum flood of 32,000 cu ft/s (906 cu m/s). Timber flashboards that were added after initial construction were subsequently removed, and their use discontinued.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 87.49 ft (26.667 m) Sept. 13, 1982; minimum, less than 52.60 ft (16.032 m) many days.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 80.91 ft (24.661 m) Oct. 22; minimum, less than 52.60 ft (16.032 m) many days.

Capacity table (elevation, in feet, and contents, in acre-feet)
(based on data from Puerto Rico Water Resources Authority)

49	0	85	484
60	97	90	586
65	156		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52.19	56.63	57.79	59.60	54.58	B	B	B	54.30	55.99	58.83	63.77
2	52.17	56.24	57.65	59.79	54.62				54.67	55.96	58.76	62.70
3	53.38	56.82	57.81	60.00	54.69				55.63	56.00	58.65	64.51
4	53.23	64.05	58.16	60.12	54.80				58.19	56.06	58.21	57.69
5	52.63	60.65	58.43	59.27	55.01				56.82	57.57	58.24	55.49
6	52.63	60.13	58.47	59.49	55.20				56.54	56.29	58.10	54.71
7	52.63	59.78	58.90	59.71	55.32				56.60	55.65	57.90	54.20
8	52.63	59.26	58.14	60.42	55.56				56.49	55.45	57.70	54.69
9	52.64	59.00	58.36	59.13	56.38				56.20	55.49	57.65	59.08
10	52.64	62.93	58.48	58.87	56.79				56.17	55.58	57.59	63.65
11	52.65	60.66	58.67	58.92	57.09				56.42	56.27	58.35	61.49
12	53.65	60.47	58.54	58.00	57.39				56.92	56.09	58.11	60.38
13	52.93	60.53	58.93	58.21	57.71				56.72	55.80	57.85	66.89
14	52.67	64.59	58.22	58.30	56.49				56.35	56.53	57.55	62.49
15	52.95	59.85	58.09	58.13	55.36			B	56.14	56.46	57.24	64.05
16	53.58	59.53	57.85	57.49	54.79			53.73	56.16	55.96	57.06	67.76
17	64.01	58.89	57.98	57.51	54.99			54.66	56.17	55.70	56.83	78.92
18	56.38	61.04	58.27	57.71	55.09			55.75	56.15	60.48	56.66	75.41
19	56.17	58.38	57.47	57.83	54.43			53.63	56.24	62.20	56.99	73.28
20	62.74	58.53	57.17	58.10	54.76			52.87	56.22	59.21	56.96	76.34
21	64.21	58.14	57.07	58.14	54.65			54.50	56.14	58.97	56.79	71.12
22	74.11	57.95	57.43	58.36	54.40			56.[illegible]	56.07	59.02	56.63	68.87
23	65.34	57.30	57.70	58.48	54.18			54.06	56.04	58.79	56.55	67.65
24	60.65	57.74	57.79	57.85	53.93			59.65	55.99	58.58	56.46	66.83
25	58.51	57.06	58.06	57.56	53.23			53.87	56.03	58.38	59.42	66.61
26	57.92	55.74	58.33	57.02	B			53.17	55.99	58.28	59.78	68.22
27	56.40	56.78	58.53	56.44				52.97	55.93	58.40	59.75	69.61
28	56.15	57.15	58.77	56.33				54.84	55.91	61.56	59.10	66.92
29	60.22	57.43	58.98	56.46	B			55.09	55.91	59.27	58.40	65.92
30	59.61	57.63	59.18	55.50	---		B	54.63	55.92	58.67	58.22	65.44
31	56.66	---	59.39	55.43	---	B		54.27	---	58.39	60.21	---
MEAN	56.59	59.03	58.21	58.20	---			---	56.16	57.52	57.95	65.15
MAX	74.11	64.59	59.39	60.42	---			---	58.19	62.20	60.21	78.92
MIN	52.17	55.74	57.07	55.43	---			---	54.30	55.46	56.46	54.20

B Stage below elevation 52.60 ft.

RIO GRANDE DE AÑASCO BASIN

50143000 RIO GRANDE DE AÑASCO NEAR LARES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'26", long 66°55'00", at bridge on Highway 124, 0.7 mi (1.1 km) downstream from confluence of Río Blanco and Río Prieto, and 3.7 mi (6.0 km) southwest of Lares plaza.

DRAINAGE AREA.--26.3 sq mi (68.1 sq km) this does not include 36.2 sq mi (93.8 sq km) which contributes only during high floods, and 3.5 sq mi (9.1 sq km) which contributes only part of its storm runoff.

PERIOD OF RECORD.--Water years 1959-68, 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT, 1983											
28...	0905	69	285	7.8	23.0	3.7	8.1	96	14	640	980
DEC											
20...	1633	35	323	8.4	25.0	35	8.6	104	<10	320	330
FEB, 1984											
08...	0940	17	313	8.2	22.0	1.0	10.0	116	<10	290	110
APR											
19...	0950	11	335	8.7	26.5	2.0	14.6	184	10	16000	K180
JUN											
22...	1215	100	254	8.3	26.0	25	8.3	104	12	2000	K1900
AUG											
16...	1700	59	257	8.2	28.0	25	8.8	114	<10	K12000	2900

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT, 1983											
28...	120	18	32	9.3	11	.5	2.0	93	24	9.7	<.10
DEC											
20...	--	--	--	--	--	--	--	122	--	--	--
FEB, 1984											
08...	--	--	--	--	--	--	--	125	--	--	--
APR											
19...	130	1	34	10	15	.6	1.5	125	27	11	<.10
JUN											
22...	--	--	--	--	--	--	--	32	--	--	--
AUG											
16...	95	7	26	7.4	9.8	.5	1.8	99	23	8.4	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT, 1983											
28...	29	180	33	5	1.7	.02	1.7	.12	2.2	2.3	4.0
DEC											
20...	--	--	--	4	--	<.01	1.2	<.01	--	3.7	4.9
FEB, 1984											
08...	--	--	--	6	--	<.01	.70	.09	.41	.50	1.2
APR											
19...	32	210	6.5	4	--	<.01	.20	.14	.36	.50	.70
JUN											
22...	--	--	--	44	1.9	.01	1.9	<.01	--	<.10	--
AUG											
16...	27	160	30	40	--	<.01	1.3	<.01	--	.30	1.6

K = non-ideal count

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RIO GRANDE DE AÑASCO BASIN

50143000 RIO GRANDE DE AÑASCO NEAR LARES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
28...	19	.03	1	<100	1	<1	3	<.1	<1	<1
DEC										
20...	22	.09	--	--	--	--	--	--	--	--
FEB , 1984										
08...	5.3	.05	--	--	--	--	--	--	--	--
APR										
19...	3.1	.35	1	<100	1	<1	<1	<.1	<1	<1
JUN										
22...	--	.04	--	--	--	--	--	--	--	--
AUG										
16...	7.1	.36	--	--	--	--	--	--	--	--

RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR

LOCATION.--Lat 18°17'05", long 67°03'05", Hydrologic Unit 21010003, on left bank, 200 ft (61 m) downstream from bridge on Highway 108, 0.4 mi (0.6 km) downstream from Quebrada La Zumbadora, 4.4 mi (7.1 km) northwest of Las Marías, 5.4 mi (8.7 km) southwest of San Sebastián.

DRAINAGE AREA.--94.3 sq mi (244.2 sq km), does not include 36.2 sq mi (93.8 sq km) which contributes only during high floods, and 3.5 sq mi (9.1 sq km) which contributes only part of its storm runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 103.72 ft (31.614 m) above mean sea level (Puerto Rico Department of Public Works bench mark). Previous to Oct. 30, 1975, a site 600 ft (180 m) upstream at same datum.

REMARKS.--Records fair. Transbasin diversion (except during floods) to Río Yauco basin for hydroelectric power and irrigation above Lago Guayo, Yahuecas, and Prieto, combined usable storage 17,300 acre-ft (21.3 cu hm). Limited storm runoff is contributed to basin by 3.5 sq mi (9.1 sq km) above Río Toro Diversion dam.

AVERAGE DISCHARGE.--21 years (1964-84), 309 cu ft/s (8.751 cu m/s), 44.50 in/yr (1,130 mm/yr), 223,900 acre-ft/yr (276 cu hm/yr); median of yearly mean discharges, 302 cu ft/s (8.55 cu m/s), 219,000 acre-ft/yr (270 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 140,000 cu ft/s (3,965 cu m/s) Sept. 16, 1975, gage height, 33.9 ft (10.33 m), from rating curve extended above 4,000 cu ft/s (113 cu m/s) on basis of slope-area measurement; minimum, 31 cu ft/s (0.878 cu m/s) Apr. 19-20, 1965, gage height, 0.88 ft (0.268 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 cu ft/s (170 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 12	1700	12,700	360	10.51	3.203	June 6	1530	13,400	379	10.78	3.286
Oct. 22	2000	*19,300	547	12.90	3.932	June 16	1730	7,110	201	7.89	2.405
Oct. 29	1645	9,250	262	8.98	2.737	Sept. 3	1845	8,670	246	8.70	2.652
Nov. 7	1900	6,500	184	7.55	2.301	Sept. 13	1900	14,500	411	11.21	3.417
June 4	2045	7,980	226	8.35	2.545	Sept. 17	2015	18,100	513	12.50	3.810
June 5	1545	6,150	174	7.35	2.240	Sept. 26	1945	12,400	343	10.37	3.161

Minimum discharge, 39 cu ft/s (1.104 cu m/s) Apr. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	153	209	409	132	92	75	61	46	184	251	181	1040
2	155	178	294	123	91	94	65	48	155	211	186	1320
3	126	218	252	123	88	74	60	50	136	206	177	1970
4	137	637	243	128	90	76	50	64	1300	246	215	993
5	264	535	231	143	92	70	59	100	1700	914	278	774
6	394	386	229	145	90	67	54	55	2090	332	183	493
7	322	1390	235	139	94	69	53	50	702	228	161	386
8	622	586	226	646	101	66	53	54	460	197	125	800
9	511	722	226	446	121	68	67	120	448	173	181	784
10	522	616	217	199	169	66	52	60	463	404	197	899
11	463	645	215	154	141	66	48	56	603	447	218	1400
12	2020	444	270	141	108	64	47	56	845	266	633	1510
13	759	342	207	148	124	63	47	87	767	199	264	3710
14	385	933	177	134	186	62	45	67	454	177	338	2490
15	266	927	201	128	133	59	66	58	319	173	540	1570
16	685	424	175	142	108	60	47	337	1230	162	388	1350
17	1070	356	168	118	95	61	66	323	644	155	234	3840
18	965	331	172	116	88	63	47	342	706	357	193	3300
19	406	597	163	111	86	59	53	432	577	738	331	2020
20	901	346	164	109	82	59	47	307	354	1220	303	2080
21	1560	654	246	107	82	60	46	380	857	566	185	1720
22	2840	457	168	106	77	91	46	634	449	372	170	1230
23	1320	374	162	104	76	98	46	546	433	458	161	1010
24	449	326	153	102	75	70	44	1050	354	303	148	830
25	303	310	148	98	75	62	43	765	463	258	248	669
26	235	286	190	98	73	71	56	426	340	232	575	1660
27	188	276	204	97	73	65	190	946	687	215	351	775
28	162	274	144	96	71	61	67	1030	354	227	246	797
29	1760	257	137	96	70	60	54	623	257	214	208	681
30	569	284	133	94	---	58	47	398	230	193	193	551
31	262	---	132	94	---	59	---	242	---	180	633	---
TOTAL	20782	14320	6291	4621	2851	2096	1696	9732	18616	10284	8504	42672
MEAN	670	477	203	149	98.3	67.6	56.5	314	621	332	274	1422
MAX	2840	1390	409	646	186	98	190	1050	2090	1220	633	3840
MIN	124	178	132	94	70	58	43	46	136	155	148	386
CFSM	7.11	5.06	2.15	1.58	1.04	.72	.60	3.33	6.59	3.52	2.91	15.1
IN.	8.20	5.65	2.48	1.82	1.12	.83	.67	3.84	7.34	4.06	3.35	16.83
AC-FT	41220	28400	12480	9170	5650	4160	3360	19300	36920	20400	16870	84640

CAL YR 1983 TOTAL 92602 MEAN 254 MAX 2840 MIN 53 CFSM 2.69 IN 36.53 AC-FT 183700
WTR YR 1984 TOTAL 142465 MEAN 389 MAX 3840 MIN 43 CFSM 4.13 IN 56.20 AC-FT 282600

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RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT , 1983											
05...	1215	214	198	8.0	26.0	120	8.3	102	24000	29000	80
FEB , 1984											
08...	1300	87	235	8.2	25.0	2.6	9.2	111	2400	62	110
JUN											
07...	1335	568	190	7.6	24.0	55	8.7	104	3700	K12000	75
AUG											
01...	1500	180	231	8.0	27.0	2.0	8.8	110	48	96	99

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT , 1983											
05...	0	20	7.3	7.9	.4	1.7	80	9.2	5.8	<.10	23
FEB , 1984											
08...	0	27	9.7	10	.4	1.4	107	12	7.9	.10	26
JUN											
07...	9	19	6.6	6.6	.3	1.6	66	12	5.8	<.10	24
AUG											
01...	1	25	8.9	9.1	.4	1.6	98	10	7.0	<.10	31

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)
OCT , 1983										
05...	132	120	76	.00	.00	.00	.00	.00	.00	.00
FEB , 1984										
08...	166	160	37	.56	<.01	--	.60	.06	.04	.02
JUN										
07...	137	120	210	1.5	.07	.09	2.4	.09	.04	.03
AUG										
01...	155	150	75	.49	<.01	--	<.10	<.01	<.01	.03

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT , 1983										
05...	.00	20	2	49	<.5	<1	<1	<3	1	50
FEB , 1984										
08...	.06	10	1	45	<.5	<1	<1	<3	1	11
JUN										
07...	.09	70	1	44	<.0	<1	1	<3	2	26
AUG										
01...	.09	30	<1	45	1	<1	<1	<3	<1	43

K = non-ideal count

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50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)
OCT , 1983										
05...	1	<4	16	<.1	20	1	<1	<1	110	<6
FEB , 1984										
08...	3	<4	17	<.1	<10	3	<1	<1	140	7
JUN										
07...	3	<4	16	<.1	<10	2	<1	<1	110	<6
AUG										
01...	<1	<4	22	<.1	<10	<1	<1	<1	130	<6

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
DEC, 06	1645	229	230	25.0	APR, 03	1215	59	242	27.0
JAN, 03	1328	131	233	24.5	MAY, 01	1426	47	238	28.5
MAR, 05	1425	72	231	25.5					

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT , 1983				
05...	1215	214	214	98
FEB , 1984				
08...	1300	37	12	100
JUN				
07...	1335	558	96	96
AUG				
01...	1300	130	129	100
01...	1500	130	--	--
02...	1240	37	12	100

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RIO GRANDE DE AÑASCO BASIN

50146000 RIO GRANDE DE AÑASCO NEAR AÑASCO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°16'00", long 67°08'05", at bridge on Highway 430, 0.2 mi (0.3 km) south of Highway 109 at a El Espino and 1.4 mi (2.3 km) east-southeast from Añasco plaza.

DRAINAGE AREA.--139 sq mi (360 sq km) this does not include 39.7 sq mi (102.8 sq km), flow is diverted to south coast.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
21...	1115	E600	163	7.5	24.0	220	8.2	96	12	23000	33000
DEC											
16...	1000	217	248	7.9	23.0	13	7.6	89	<10	K630	390
FEB , 1984											
09...	0900	140	232	7.8	24.0	12	7.9	92	15	2900	750
MAY											
10...	1820	67	236	8.1	28.0	95	8.2	107	<10	240	K170
JUN											
29...	1700	319	234	8.0	27.5	20	17.4	220	14	K770	260
AUG											
28...	1820	331	212	8.0	28.0	50	7.1	91	12	2300	K1400

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT , 1983											
21...	66	2	17	5.7	6.1	.3	1.7	64	10	5.1	<.10
DEC											
16...	--	--	--	--	--	--	--	105	--	--	--
FEB , 1984											
09...	--	--	--	--	--	--	--	102	--	--	--
MAY											
10...	97	2	24	8.9	9.1	.4	1.4	98	15	7.3	.10
JUN											
29...	--	--	--	--	--	--	--	94	--	--	--
AUG											
28...	80	0	20	7.2	7.7	.4	1.7	84	9.2	6.3	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT , 1983											
21...	22	110	--	278	1.5	.04	1.5	.09	.91	1.0	2.5
DEC											
16...	--	--	--	33	.89	.01	.90	.03	.17	.20	1.1
FEB , 1984											
09...	--	--	--	9	.49	.01	.50	1.0	.40	1.4	1.9
MAY											
10...	26	150	27	210	.18	.02	.20	.29	3.8	4.1	4.3
JUN											
29...	--	--	--	34	--	<.01	.70	.04	.26	.30	1.0
AUG											
28...	25	130	114	94	.89	.01	.90	.04	.46	.50	1.4

E = estimate
K = non-ideal count

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RIO GRANDE DE AÑASCO BASIN

50146000 RIO GRANDE DE AÑASCO NEAR AÑASCO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
21...	11	.20	1	100	2	24	11	<.1	<1	3
DEC										
16...	6.9	.06	--	--	--	--	--	--	--	--
FEB , 1984										
09...	3.4	.05	--	--	--	--	--	--	--	--
MAY										
10...	19	.04	1	100	3	19	4	<.1	<1	<1
JUN										
29...	4.6	.03	--	--	--	--	--	--	--	--
AUG										
28...	5.2	.04	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JUN , 1984								
29...	1700	<.1	<.01	<.1	<.01	<.01	<.01	<.01

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JUN , 1984									
29...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)
JUN , 1984								
29...	<.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

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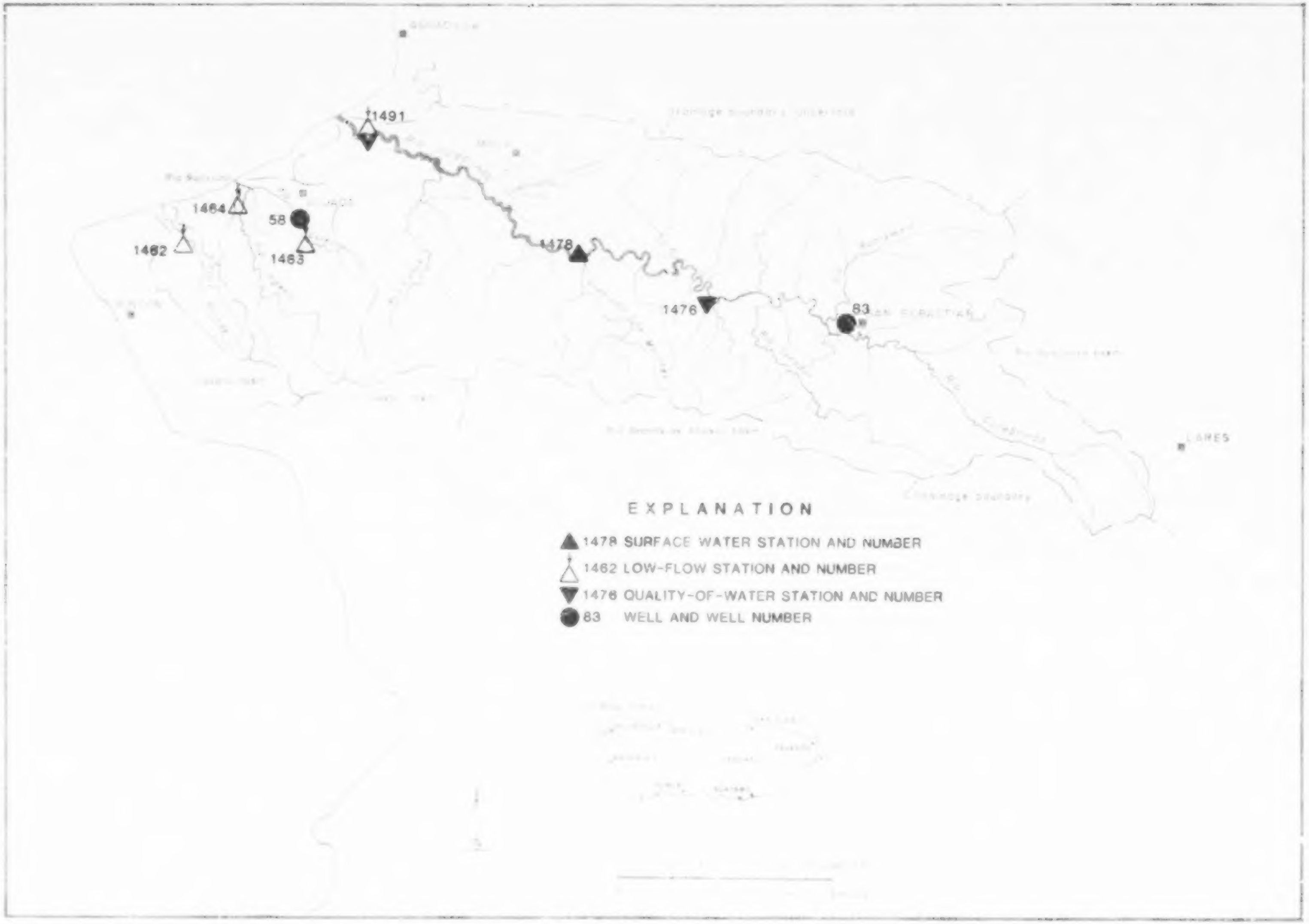
1491
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SAN SEBASTIAN
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EXPLANATION
▲ 1478 SURFACE WATER STATION AND NUMBER
△ 1462 LOW-FLOW STATION AND NUMBER
▼ 1476 QUALITY-OF-WATER STATION AND NUMBER
● 83 WELL AND WELL NUMBER

Figure 24.--Río Culebrinas basin.

2

RIO CULEBRINAS BASIN

50147600 RIO CULEBRINAS NEAR SAN SEBASTIAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'51", long 67°02'40", at bridge on Highway 423, 1.3 mi (2.1 km) south of Quebrada El Salto Bridge on Highway 111, and 2.1 mi (3.4 km) west of Central La Plata.

DRAINAGE AREA.--58.2 sq mi (150.7 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT, 1983 27...	0955	151	287	8.0	23.5	13	7.9	93	12	4400	3400
DEC 21...	0856	105	234	7.9	22.5	70	7.7	89	15	48000	52000
FEB, 1984 08...	1615	42	252	4.0	24.0	2.5	4.8	57	15	>60000	8900
APR 19...	1525	17	475	8.2	23.0	13	8.3	113	27	K7400	350
JUN 22...	1900	299	309	8.1	25.0	36	7.7	95	<10	25000	4700
AUG 17...	1130	170	243	8.0	25.5	250	8.0	98	<10	K140000	24000

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT, 1983 27...	120	2	40	4.9	10	.4	1.8	117	12	10	.10
DEC 21...	--	--	--	--	--	--	--	87	--	--	--
FEB, 1984 08...	--	--	--	--	--	--	--	114	--	--	--
APR 19...	140	0	44	7.5	32	1	13	175	23	24	<.10
JUN 22...	--	--	--	--	--	--	--	123	--	--	--
AUG 17...	99	1	34	5.5	6.7	.3	2.2	98	16	7.9	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
OCT, 1983 27...	23	180	72	18	1.4	.03	1.4	.15	.25	.40	1.8
DEC 21...	--	--	--	8	1.5	.04	1.5	.02	.08	.10	1.6
FEB, 1984 08...	--	--	--	21	.19	.01	.20	.08	2.6	2.7	2.9
APR 19...	38	290	13	20	.75	.15	.90	.64	.86	1.5	2.4
JUN 22...	--	--	--	50	1.2	.02	1.2	.02	--	<.10	--
AUG 17...	15	140	68	320	1.1	.07	1.2	.13	.97	1.1	2.3

K = non-ideal count

RIO CULEBRINAS BASIN

50147600 RIO CULEBRINAS NEAR SAN SEBASTIAN, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)
OCT , 1983										
27...	8.0	.04	1	<100	1	1	3	<.1	<1	<1
DEC										
21...	7.1	.13	--	--	--	--	--	--	--	--
FEB , 1984										
08...	13	.16	--	--	--	--	--	--	--	--
APR										
19...	11	.59	3	100	1	<1	1	.5	<1	<1
JUN										
22...	--	.27	--	--	--	--	--	--	--	--
AUG										
17...	10	.12	--	--	--	--	--	--	--	--

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RIO CULEBRINAS BASIN

50147800 RIO CULEBRINAS AT HIGHWAY 404 NEAR MOCA, PR

LOCATION.--Lat 18°21'42", long 67°05'33", Hydrologic Unit 21010003, on right bank, at bridge on Highway 404, 0.3 mi (0.5 km) downstream from Quebrada Yagruma, and 2.8 mi (4.5 km) southeast of Moca.

DRAINAGE AREA.--71.2 sq mi (184.4 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 45 ft (13.7 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--17 years (1968-84), 300 cu ft/s (8.496 cu m/s), 57.22 in/yr (1,453 mm/yr), 217,400 acre-ft/yr (268 cu hm/yr); median of yearly mean discharges, 286 cu ft/s (8.10 cu m/s), 207,000 acre-ft/yr (255 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,000 cu ft/s (1,954 cu m/s) Sept. 16, 1975, gage height, 36.6 ft (11.16 m) from slope-area measurement, but may have been exceeded by flood of Oct. 23, 1974, from rating curve extended above 2,600 cu ft/s (73.6 cu m/s) on basis of slope-area and contracted-opening measurements of peak flow; minimum, 16 cu ft/s (0.453 cu m/s) Apr. 17-19, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 11,300 cu ft/s (320 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 7	1845	14,300	405	23.81	7.257	Sept. 15	1930	*26,700	756	28.03	8.544
Oct. 8	1915	12,000	340	22.80	6.949	Sept. 16	1615	13,900	394	23.65	7.208
June 5	1900	24,400	691	27.36	8.339	Sept. 17	1845	14,300	405	23.79	7.251
June 19	1830	12,400	351	22.96	6.998	Sept. 18	1800	16,800	476	24.82	7.565
Sept. 1	1830	12,000	340	22.78	6.943	Sept. 2[illegible]	2400	12,500	354	22.98	7.004
Sept. 14	2200	12,300	348	22.93	6.989						

Minimum discharge, 21 cu ft/s (0.595 cu m/s) Apr. 25,26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	179	175	123	74	48	43	38	30	126	224	96	2250
2	234	165	114	65	47	60	41	26	104	165	96	314
3	176	242	106	64	46	47	39	29	95	151	89	460
4	170	531	100	63	46	45	35	55	340	831	105	810
5	374	312	98	66	47	40	35	101	5320	1810	143	292
6	325	535	95	63	47	40	33	50	1550	335	99	249
7	2690	738	93	64	57	37	37	39	1880	248	85	195
8	2280	303	95	84	54	40	69	32	746	213	88	179
9	924	280	90	85	69	41	33	67	1050	192	196	166
10	409	221	89	63	44	40	33	44	451	548	114	293
11	305	216	87	58	44	38	31	41	328	303	105	568
12	597	199	85	56	44	36	30	55	243	227	204	533
13	458	172	85	91	58	35	29	41	481	185	344	601
14	279	375	82	148	108	35	72	70	291	168	251	2530
15	235	313	81	89	74	34	95	45	196	160	374	6920
16	275	171	78	79	66	34	63	51	324	151	388	4720
17	221	158	7[illegible]	77	61	33	32	475	262	143	421	3940
18	1600	153	75	68	56	35	36	416	1840	146	198	4360
19	1030	162	73	63	53	33	31	236	2320	156	148	942
20	852	328	86	61	52	29	33	282	522	406	166	564
21	442	185	138	62	48	54	33	1770	1500	201	133	441
22	555	175	81	60	50	83	30	476	534	143	141	368
23	338	141	74	59	48	99	27	257	321	133	144	1510
24	323	134	77	56	46	86	25	161	449	123	119	410
25	265	129	72	57	47	48	26	153	430	116	110	303
26	228	126	73	55	51	44	135	493	402	110	625	1190
27	296	120	116	54	46	45	227	506	331	105	337	1570
28	204	116	69	53	45	43	55	410	242	108	183	731
29	404	111	73	51	44	39	40	285	201	121	141	443
30	246	109	69	50	---	39	32	172	180	105	130	334
31	212	---	76	50	---	36	---	151	---	98	443	---
TOTAL	17126	7094	2740	2089	1526	1389	1433	7049	23057	8125	6214	38191
MEAN	552	236	88.4	67.4	52.6	44.8	47.8	227	769	262	200	1273
MAX	2690	738	138	148	108	99	227	1770	5320	1810	625	6920
MIN	170	109	69	50	44	29	25	26	95	98	85	166
CFSM	7.75	3.32	1.24	.95	.74	.63	.67	3.19	10.8	3.68	2.81	17.9
IN.	8.95	3.71	1.44	1.09	.80	.73	.75	3.68	12.05	4.25	3.25	19.95
AC-FT	33970	14070	5450	4140	3030	2760	2840	13980	45730	16120	12330	75750

CAL YR 1983 TOTAL 81893 MEAN 224 MAX 3880 MIN 19 CFSM 3.15 IN 42.79 AC-FT 162400
WTR YR 1984 TOTAL 116041 MEAN 317 MAX 6920 MIN 25 CFSM 4.45 IN 60.63 AC-FT 230200

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1991 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 05	0952	152	227	24.5	MAR, 06	0937	38	276	23.0
NOV, 08	1407	195	254	25.5	APR, 05	1011	38	265	25.0
DEC, 07	0940	91	241	23.0	MAY, 03	1257	28	318	27.0
JAN, 12	0920	58	232	23.5	JUL, 11	1330	246	224	26.5
FEB, 08	1413	58	242	24.5	AUG, 08	1802	90	224	28.0

50149100 RIO CULEBRINAS NEAR AGUADA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'03", long 67°09'40", at bridge on Highway 2, and 2.3 mi (3.7 km) northeast of Aguada plaza.

DRAINAGE AREA.--97.0 sq mi (251.2 sq km).

PERIOD OF RECORD.--Water years 1958, 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1983											
27...	1345	280	318	7.8	25.5	33	7.2	88	10	K15000	K10000
DEC											
21...	1230	236	295	7.7	24.5	200	7.2	86	10	3800	2500
FEB , 1984											
09...	1225	68	364	6.7	27.0	11	4.5	56	130	35000	K1200000
MAY											
10...	1450	47	385	7.9	28.0	3.8	6.1	--	12	30000	K16000
JUN											
21...	1950	1230	259	7.9	25.0	200	6.7	81	20	50000	29000
AUG											
17...	1830	498	244	8.0	26.0	280	6.7	83	21	>60000	K110000

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT , 1983											
27...	130	2	45	5.4	12	.5	2.1	133	10	11	.10
DEC											
21...	--	--	--	--	--	--	--	116	--	--	--
FEB , 1984											
09...	--	--	--	--	--	--	--	146	--	--	--
MAY											
10...	140	0	47	6.4	20	.8	4.3	150	21	17	.20
JUN											
21...	--	--	--	--	--	--	--	103	--	--	--
AUG											
17...	94	0	32	3.4	7.2	.3	2.2	108	18	9.9	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT , 1983											
27...	27	190	146	62	1.1	.03	1.1	.34	.36	.70	1.8
DEC											
21...	--	--	--	5	1.2	.04	1.2	.05	.45	.50	1.7
FEB , 1984											
09...	--	--	--	28	.37	.03	.40	.29	1.8	2.1	2.5
MAY											
10...	31	230	--	34	.76	.04	.80	.59	2.8	3.4	4.2
JUN											
21...	--	--	--	1270	.64	.06	.70	.14	.26	.40	1.1
AUG											
17...	14	150	204	1800	.64	.16	.80	.25	2.1	2.3	3.1

K = non-ideal count

50149100 RIO CULEBRINAS NEAR AGUADA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
OCT , 1983										
27...	8.0	.07	1	<100	1	2	6	<.1	<1	<1
DEC										
21...	7.5	.10	--	--	--	--	--	--	--	--
FEB , 1984										
09...	11	.18	--	--	--	--	--	--	--	--
MAY										
10...	19	.23	2	100	2	<1	10	.1	<1	<1
JUN										
21...	4.9	.09	--	--	--	--	--	--	--	--
AUG										
17...	14	.17	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JUN , 1984								
21...	1950	<.1	<.01	<.1	<.01	<.01	<.01	<.01

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
JUN , 1984									
21...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)
JUN , 1984								
21...	<.01	<.01	<.01	<.01	<.10	<.1	<1	<.01

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DISCHARGE AT PARTIAL-RECORD STATIONS

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are useable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations and the second is a table of annual maximum stage and discharge at crest-stage stations.

Low-flow partial-record stations

Measurements of streamflow in the areas covered by this report made at low-flow partial-record stations are given in the following table. These measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of nearby stream when continuous records are available, will give a picture of the low-flow potentiality of stream.

Discharge measurements made at low-flow partial-records stations during water year 1984

PUBLICATION RECORD

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Quebrada de los Cedros basin						
50007000	Quebrada de los Cedros near Isabela, PR	Lat 18 30 46, long 67 05 47 Hydrologic unit 21010002. On dirt road, 4.7mi (7.6km) west of Isabela, and 0.5 mi (0.8 km) upstream from mouth.	6.91 (17.90)	3/27/84		DRY	-	-
		Rio Guajataca basin						
50011400	Rio Guajataca above mouth near Quebradillas, PR	Lat 18 28 31, long 66 57 45 Hydrologic unit 21010002. At ford, 1.7 mi (2.7 km) upstream from bridge on Hwy 2, 2.1 mi (3.4 km) from the Atlantic Ocean, 6.6 mi (10.6 km) downstream from Lago Guajataca, and 1.6 mi (2.6 km) west of Quebradillas.	23.7 (61.4)	3/27/84	1340	8.01 (0.23)	564	26.0
		Rio Camuy basin						
50015800	Rio Camuy at Capaez, PR	Lat 18 27 49, long 66 49 58 Hydrologic unit 21010002. At 1.1 mi (1.7 km) south of Purification Plant of Hatillo, about 1.4 mi (2.2 km) south of Hwy 2, and 1.8 mi (2.9 km) upstream from mouth.	22.0 (57.0)	3/26/84		No Meas		
		Rio Cibuco basin						
50039000	Rio Indio near Vega Baja, PR	Lat 18 26 19, long 66 22 13 Hydrologic unit 21010002. At bridge on Hwy 160, 0.6 mi (1.0 km) upstream from Rio Cibuco, and 1.2 mi (1.9 km) southeast of Vega Baja.	26.7 (69.2)	3/28/84	1450	6.86 (0.19)	456	27.0
		Rio de la Plata basin						
50045800	Rio Lajas at Toa Alta, PR	Lat 18 23 39, long 66 15 16 Hydrologic unit 21010005. At bridge on Hwy 165, 0.2 mi (0.3 km) upstream from Rio de la Plata, and 0.5 mi (0.8 km) northwest of Toa Alta.	8.60 (22.27)	3/29/84	1128	1.39 (0.04)	649	25.5

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPECIFIC CONDUCTANCE umhos	TEMPERATURE deg C
		Rio Hondo basin						
50047502	Rio Hondo at Bayamon, PR	Lat 18 23 51, long 66 09 22 Hydrologic unit 21010005. At bridge on Hwy 2, 700 ft (213 m) east of Hwy 2 and Calle Parque intersection, and 0.7 mi (1.2 km) south of sewage treatment plant.	7.59 (19.65)	3/29/84	1330	6.29 (0.18)	888	27.0
50047504	Quebrada Santa Catalina at Bayamon, PR	Lat 18 24 05, long 66 09 43 Hydrologic unit 21010005. 700 ft (213 m) downstream from bridge on Hwy 2 and 0.2 mi (0.3 km) upstream from mouth.	2.50 (6.47)	3/30/84	0939	1.35 (0.04)	987	26.5
50047509	Cano de Quebrada Catalina at Bayamon, PR	Lat 18 24 27, long 66 09 38 Hydrologic unit 21010005. At bridge on new Hwy 167, 0.7 mi (1.1 km) north of Hwy 2 and Calle Parque intersection, and 0.2 mi (0.3 km) upstream from sewage treatment plant.	0.65 (1.68)	3/29/84		No Flow	-	-
50047525	Rio Hondo II near Bayamon, PR	Lat 18 25 19, long 66 10 38 Hydrologic unit 21010005. At bridge on Hwy 872 and 0.7 mi (1.1 km) downstream from bridge on Hwy 22.	3.18 (8.24)	3/30/84	1024	1.43 (0.04)	658	27.5
		Rio de Bayamon basin						
50048510	Rio de Bayamon at Flood Channel at Bayamon, PR	Lat 18 24 29, long 66 09 04 Hydrologic unit 21010005. At bridge on Hwy 890, 1.0 mi (1.6 km) downstream from bridge on Hwy 2, and 3.2 mi (5.1 km) upstream from mouth.	73.2 (189.6)	3/30/84	0843	18.2 (0.52)	470	26.0
		Rio Puerto Nuevo basin						
50049000	Rio Piedras at Rio Piedras, PR	Lat 18 23 48, long 66 03 24 Hydrologic unit 21010005. On left bank, at bridge on Hwy 1, 0.3 mi (0.5 km) southwest of Rio Piedras Plaza, and 0.4 mi (0.6 km) downstream from diversion for water supply.	12.5 (32.4)	3/29/84	1153	5.96 (0.17)	437	27.5
50049310	Quebrada Josefina at Pinero Avenue, PR	Lat 18 24 33, long 66 04 36 Hydrologic unit 21010005. At bridge on Pinero Ave, and 0.4 mi (0.6 km) upstream from junction with Rio Piedras.	19.0 (49.2)	3/29/84	1321	8.50 (0.24)	426	32.0
50049600	Quebrada Margarita at Caparra Heights, PR	Lat 18 24 33, long 66 06 18 Hydrologic unit 21010005. At bridge on Franklin D. Roosevelt Ave, at San Patricio Plaza and Fort Buchanan interchange with Hwy 2, and 0.1 mi (0.2 km) south of Caparra Heights.	1.82 (4.71)	3/29/84		No Meas		

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Quebrada Blasina basin						
50050300	Quebrada Blasina near Carolina, PR	Lat 18 23 27, long 65 58 28 Hydrologic unit 21010005. At bridge on Hwy 3, 1.4 mi (2.3 km) south of Valle Arriba Heights, and 1.2 mi (1.9 km) west-southeast of Carolina.	2.96 (7.67)	3/26/84	1000	4.71 (0.13)	583	27.5
				5/07/84	1134	4.97 (0.14)	710	29.0
		Rio Grande de Loiza basin						
50051010	Rio Grande de Loiza below Rio Emajagua, PR	Lat 18 07 23, long 65 59 18 Hydrologic unit 21010005. 200 ft (61 m) below junction with Rio Emajagua and 400 ft (122 m) north of Hwy 181 and Hwy 745 intersection.	12.2 (31.6)	3/27/84	1020	15.8 (0.45)	141	25.5
				5/09/84	1034	11.4 (0.32)	163	27.0
50051140	Rio Grande de Loiza at Jagual, PR	Lat 18 09 29, long 65 58 48 Hydrologic unit 21010005. 200 ft (61 m) east of Jagual School on Hwy 181 and 1.7 mi (2.8 km) above junction with Rio Cayaguas.	17. (46.1)	3/27/84	1138	19.2 (0.54)	157	26.0
				5/09/84	1152	14.7 (0.42)	172	28.5
50052300	Rio Grande de Loiza at San Lorenzo North, PR	Lat 18 11 39, long 65 57 46 Hydrologic unit 21010005. Above sewage treatment plant on north side of San Lorenzo, 0.2 mi (0.3 km) northeast of the plaza, and 1.6 mi (2.6 km) downstream from Rio Cayaguas.	46.0 (119.1)	3/27/84	1342	37.1 (1.05)	182	30.5
				5/08/84	1352	18.7 (0.53)	277	33.0
50052700	Rio Grande de Loiza at Hwy 183, PR	Lat 18 12 22, long 65 59 23 Hydrologic unit 21010005. 2.1 mi (3.4 km) northwest of Plaza de San Lorenzo and 1.8 mi (2.9 km) downstream from bridge on Hwy 181.	50.9 (131.8)	3/27/84	1446	39.0 (1.10)	211	31.0
				5/08/84	1213	22.2 (0.63)	232	23.5
50052900	Quebrada las Bambuas at mouth, PR	Lat 18 13 31, long 66 00 58 Hydrologic unit 21010005. 300 ft (91 m) upstream from bridge on Hwy 183 and 900 ft (275 m) above junction with Rio Grande de Loiza.	2.33 (6.03)	3/26/84	1407	0.33 (0.01)	545	24.0
				5/08/84	1043	0.07 (0.002)	539	26.0
50053050	Rio Turabo at Borinquen, PR	Lat 18 10 11, long 66 02 37 Hydrologic unit 21010005. At bridge on Hwy 765 and 1.2 mi (1.9 km) north of Escuela Anon.	7.79 (20.19)	3/26/84	1036	8.42 (0.24)	172	24.5
				5/07/84	1230	8.34 (0.24)	183	28.5
50053300	Quebrada Beatriz above Rio Turabo, PR	Lat 18 11 15, long 66 03 04 Hydrologic unit 21010005. 1,400 ft (425 m) downstream from bridge on Hwy 765 and 400 ft (120 m) above junction with Rio Turabo.	5.65 (14.63)	3/26/84	1140	2.56 (0.07)	250	27.0
				5/07/84	1412	2.81 (0.08)	268	29.5
50053500	Rio Turabo below Quebrada Beatriz, PR	Lat 18 11 22, long 66 03 02 Hydrologic unit 21010005. 0.9 mi (1.4 km) downstream from bridge on Hwy 765 and 400 ft (120 m) below junction with Quebrada Beatriz.	17.3 (44.8)	3/26/84	1220	12.7 (0.36)	206	28.0
				5/07/84	1506	9.00 (0.25)	220	30.5

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Rio Grande de Loiza basin						
50054500	Rio Turabo at Caguas, PR	Lat 18 13 36, long 66 01 40 Hydrologic unit 21010005. At bridge on Hwy 183, 0.9 mi (1.5 km) southeast of the plaza in Caguas, and 1.3 mi (2.1 km) upstream from Rio Grande de Loiza.	29.3 (75.9)	3/26/84	1336	6.83 (0.19)	256	29.0
				5/08/84	0940	3.89 (0.11)	359	26.5
50055310	Rio Caguitas above mouth, PR	Lat 18 15 22, long 66 01 06 Hydrologic unit 21010005. 0.5 mi (0.7 km) downstream from bridge on Hwy 30 and 0.4 mi (0.7 km) above junction with Rio Grande de Loiza.	18.0 (46.6)	3/29/84	1157	15.3 (0.43)	696	23.5
				5/10/84	1430	16.4 (0.46)	430	31.0
50055410	Rio Bairoa at mouth, PR	Lat 18 15 47, long 66 01 09 Hydrologic unit 21010005. 0.8 mi (1.2 km) downstream from bridge on Hwy 30 and 0.4 mi (0.6 km) above junction with Rio Grande de Loiza.	7.51 (19.45)	3/29/84	1303	1.86 (0.05)	489	29.0
				5/10/84	1521	2.63 (0.07)	440	31.0
50055500	Quebrada Honda at Las Torres, PR	Lat 18 13 15, long 65 49 57 Hydrologic unit 21010005. At bridge on Hwy 31, 100 ft (30 m) east of Hwy 31 and Hwy 935 intersection, and 1.8 mi (2.9 km) above junction with Rio Gurabo.	1.15 (2.98)	3/30/84	1130	0.11 (0.003)	408	26.5
				5/07/84	1310	DRY	-	-
50055600	Rio Gurabo at Ceiba Norte, PR	Lat 18 13 29, long 65 51 34 Hydrologic unit 21010005. 0.4 mi (0.6 km) downstream from bridge on Hwy 31 and 0.2 mi (0.4 km) below junction with Quebrada Honda.	12.0 (31.1)	3/30/84	1225	3.25 (0.09)	322	32.0
				5/07/84	1235	1.08 (0.03)	400	25.0
50055700	Rio Gurabo at El Mango, PR	Lat 18 13 56, long 65 52 52 Hydrologic unit 21010005. 1.2 mi (2.0 km) upstream from bridge on Hwy 31 and 0.2 mi (0.4 km) above junction with Quebrada Grande.	16.5 (42.7)	3/28/84	1110	3.23 (0.09)	376	24.0
				5/09/84	1456	1.25 (0.04)	387	32.0
50056000	Rio Valenciano near Las Piedras, PR	Lat 18 10 37, long 65 54 21 Hydrologic unit 21010005. At bridge on Hwy 133 (km 17.3), and 3.2 mi (5.1 km) west of Las Piedras.	6.85 (17.74)	3/28/84	1004	6.22 (0.18)	203	24.0
				5/09/84	1326	4.17 (0.12)	221	32.5
50056550	Rio Valenciano at mouth, PR	Lat 18 14 13, long 65 55 13 Hydrologic unit 21010005. 0.6 mi (1.0 km) downstream from bridge on Hwy 31 and 1,000 ft (305 m) above junction with Rio Gurabo.	19.0 (49.2)	3/28/84	1240	10.9 (0.31)	354	28.0
				5/09/84	1629	7.61 (0.22)	413	32.0
50056600	Rio Gurabo near Juncos, PR	Lat 18 14 38, long 65 55 25 Hydrologic unit 21010005. At bridge on Hwy 185 and 0.4 mi (0.6 km) below junction with Rio Valenciano.	50.0 (129.5)	3/28/84	1338	13.7 (0.39)	348	29.5
				5/08/84	1521	7.79 (0.22)	357	32.5
50057015	Rio Gurabo below Hwy 943, PR	Lat 18 15 50, long 65 58 41 Hydrologic unit 21010005. 0.6 mi (0.9 km) northeast of Plaza de Gurabo and 0.7 mi (1.2 km) downstream from bridge on Hwy 181.	62.4 (161.6)	3/29/84	1412	15.8 (0.45)	382	29.0
				5/10/84	1220	12.0 (0.34)	432	29.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Rio Grande de Loiza basin						
50058400	Rio Canas above Lago Loiza, PR	Lat 18 17 34, long 65 02 33 Hydrologic unit 21010005. At bridge about 2000 ft (610 m) off Hwy 1, 1.0 mi (1.6km) upstream from Lago Loiza, 1.0 mi (1.6 km) north of La Barra, and 4.0 mi (6.4 km) north of Caguas.	7.63 (19.76)	3/29/84	1021	2.20 (0.06)	339	26.0
				5/10/84	1054	1.49 (0.04)	362	28.0
50059000	Lago Loiza at Dam Site, PR	Lat 18 19 49, long 66 01 00 Hydrologic unit 21010005. At pumphouse at damsite and 1.9 mi (3.1 km) south of Trujillo Alto Plaza.	208 (539)	3/29/84	0926	2.00 (0.06)	210	26.0
				5/10/84	0955	1.37 (0.04)	338	29.0
50059200	Quebrada Grande at La Gloria, PR	Lat 18 20 28, long 65 59 20 Hydrologic unit 21010005, 400 ft (122 m) downstream from bridge on Hwy 181, 200 ft (61 m) below junction with Quebrada Grande, and 1.5 mi (2.4 km) above junction with Rio Grande de Loiza.	12.0 (31.1)	3/26/84	1445	2.25 (0.06)	559	30.0
				5/09/84	1021	0.64 (0.02)	630	25.0
50060000	Rio Grande de Loiza above Carolina, PR	Lat 18 22 10, long 65 57 50 Hydrologic unit 21010005. 0.5 mi (0.8 km) west of Trujillo Bajo and 0.2 mi (0.3 km) northwest of intersection of Hwys 853 and 858.	230 (596)	3/26/84	1335	NO FLOW DEEP POOL	367	30.5
				5/09/84		NO MEAS	-	-
50060200	Quebrada Maracuta at Trujillo Bajo, PR	Lat 18 22 11, long 65 57 23 Hydrologic unit 21010005. At bridge on Hwy 853 and 0.3 mi (0.5 km) above junction with Rio Grande de Loiza.	10.2 (26.4)	3/26/84	1255	1.30 (0.04)	549	32.0
				5/09/84	1305	0.56 (0.02)	680	30.0
50061000	Rio Grande de Loiza at Carolina, PR	Lat 18 22 39, long 65 57 08 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) southeast of Carolina Plaza, and 9.1 mi (14.6 km) upstream from mouth.	243 (629)	3/26/84	1130	43.3 (1.23)	355	30.0
				5/07/84	1322	11.7 (0.33)	437	29.0
50061200	Rio Canovanillas at Carruzos, PR	Lat 18 17 03, long 65 54 16 Hydrologic unit 21010005. At bridge on road 500 ft (152 m) off Hwy 185, and 0.7 mi (1.1 km) east of Jesus T. Pinero School.	9.10 (23.57)	3/28/84	1145	2.52 (0.07)	564	27.5
				5/09/84	1436	1.45 (0.04)	652	28.5
50061500	Rio Canovanillas at Loiza, PR	Lat 18 22 44, long 65 55 00 Hydrologic unit 21010005.At bridge on Hwy 3, 0.9 mi (1.4 km) upstream from Rio Grande de Loiza, and 1.0 mi (1.6 km) west of Loiza.	16.5 (42.7)	3/28/84	0920	4.50 (0.13)	583	26.0
				5/07/84	1440	2.99 (0.08)	592	30.5
50061900	Rio Canovanas at La Marina, PR	Lat 18 21 01, long 65 53 5[illegible] Hydrologic unit 21010005. 100 ft (30 m) east of Hwy 185 and 0.9 mi (1.5 km) downstream from bridge on Hwy 957.	14.6 (37.8)	3/28/84	1255	8.58 (0.24)	293	28.0
				5/09/84	1540	4.67 (0.13)	352	27.5
50062000	Rio Canovanas at Loiza, PR	Lat 18 22 53, long 65 53 33 Hydrologic unit 21010005.At bridge on Hwy 958 and 0.3 mi (0.5 km) east of Loiza.	17.0 (44.0)	3/28/84	1010	0.50 (0.01)	317	25.5
				5/07/84	1518	0.32 (0.01)	378	23.5

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Rio Herrera basin						
50062500	Rio Herrera near Colonia Dolores, PR	Lat 18 21 32, long 65 52 00 Hydrologc unit 21010005. On right bank, at bridge on on Hwy 958, 2.0 mi (3.2 km) south of Colonia Dolores, and 3.2 mi (5.1 km) southwest of Rio Grande.	2.75 (7.12)	3/29/84	1025	3.58 (0.10)	232	25.0
				5/08/84	1543	1.09 (0.03)	300	27.5
50062800	Rio Herrera near Loiza, PR	Lat 18 22 48, long 65 51 33 Hydrologic unit 21010005.At bridge on Hwy 3, 1.9 mi (3.1 km) west of Rio Grande, and 2.8 mi (4.5 km) east of Loiza.	3.86 (10.00)	3/29/84	0930	2.94 (0.08)	257	25.5
				5/07/84	1614	2.83 (0.08)	317	29.0
50063000	Quebrada Cambalache near Loiza, PR	Lat 18 22 49, long 65 52 04 Hydrologic unit 21010005.At bridge on Hwy 3, 2.2 mi (3.5 km) east of Loiza, and 2.5 mi (4.0 km) west of Rio Grande.	1.32 (3.42)	3/29/84	0840	0.27 (0.01)	602	25.5
				5/07/84	1654	0.32 (0.01)	730	27.5
		Rio Espiritu Santo basin						
50063540	Rio Espiritu Santo at Camp Eliza Colberg, PR	Lat 18 20 22, long 65 49 42 Hydrologic unit 21010005. 3.1 mi (4.9 km) northeast of Pico El Yunque and 0.8 mi (1.3 km) below junction with Quebrada Sonadura.	5.27 (13.65)	3/27/84	1010	6.56 (0.19)	79	23.0
				5/08/84	1407	4.61 (0.13)	74	27.5
50063850	Quebrado Jimenez near Rio Grande, PR	Lat 18 21 36, long 65 48 47 Hydrologic unit 21010005. 300 ft (91 m) upstream from Rio Espiritu Santo and 1.9 mi (3.1 km) southeast of Rio Grande.	3.63 (9.40)	3/27/84	1125	3.31 (0.09)	150	25.0
				5/08/84	1105	3.75 (0.11)	107	26.5
50064200	Rio Grande near El Verde, PR	Lat 18 20 43, long 65 50 30 Hydrologic unit 21010005.On left bank, 400 ft (120 m) upstream from bridge on Hwy 960, 500 ft (150 m) southwest of junction of Hwys 956 & 960, 1.1 mi (1.8 km) west of El Verde, and 2.7mi (4.3km) south of Rio Grande.	7.31 (18.93)	3/29/84	1345	6.16 (0.17)	155	27.5
				5/08/84	1204	4.25 (0.12)	202	31.5
50064500	Rio Grande at Rio Grande, PR	Lat 18 22 40, long 65 49 23 Hydrologic unit 21010005.At bridge on Hwy 3, 0.5 mi (0.8 km) southeast of Rio Grande, and 0.8 mi (1.3km) upstream from Rio Espiritu Santo.	10.4 (26.9)	3/29/84	1115	1.96 (0.06)	207	27.0
				5/08/84	0916	4.92 (0.14)	248	27.0
50064900	Quebrada Juan Gonzalez near Rio Grande, PR	Lat 18 22 37, long 65 48 04 Hydrologic unit 21010005.At bridge on Hwy 955, 800 ft (244 m) upstream from bridge on Hwy 3, and 1.5 mi (2.4 km) above junction with Rio Espirutu Santo.	2.17 (5.62)	3/27/84	1355	1.43 (0.04)	237	25.0
				5/08/84	1017	0.72 (0.02)	367	25.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Rio Mameyes basin						
50066000	Rio Mameyes at Mameyes, PR	Lat 18 22 30, long 65 45 50 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) downstream from Quebrada Anon, 0.5 mi (0.8 km) east of Mameyes (Palmer Post Office), and 3.1 mi (5.0 km) east of Luquillo.	13.5 (35.0)	3/27/84	1525	16.7 (0.47)	159	28.0
				5/08/84	1124	12.3 (0.35)	143	26.0
		Quebrada Mata de Platano basin						
50066500	Quebrada Mata de Platano near Luquillo, PR	Lat 18 22 52, long 65 43 16 Hydrologic unit 21010005. At bridge on Hwy 3, 0.4 mi (0.6 km) northwest of Luquillo Plaza, and 0.3 mi (0.5 km) above mouth.	2.38 (6.16)	3/26/84	1110	NO FLOW	12400	26.5
				5/07/84	1134	NO FLOW	17400	28.0
		Rio Sabana basin						
50068000	Rio Sabana at Luquillo, PR	Lat 18 22 15, long 65 42 51 Hydrologic unit 21010005. At Hwy 3 bridge and 0.4 mi (0.6 km) southwest of Luquillo.	7.05 (18.26)	3/26/84	1208	4.17 (0.12)	171	26.0
				5/07/84	1239	3.28 (0.09)	168	27.0
		Rio Pitahaya basin						
50069000	Rio Pitahaya near Luquillo, PR	Lat 18 21 32, long 65 42 03 Hydrologic unit 21010005. At bridge on Hwy 3, 1.6 mi (2.6 km) southeast of Luquillo, and 1.7 mi (2.7 km) upstream from Rio Sabana.	4.51 (11.68)	3/26/84	1248	NO FLOW	171	26.5
				5/07/84	1351	3.25 (0.09)	178	27.0
		Rio Juan Martin basin						
50069300	Tributary to Rio Juan Martin at Hwy 3, PR	Lat 18 21 14, long 65 40 59 Hydrologic unit 21010005. At bridge on Hwy 3 and 200 ft (61 m) above junction with Rio Juan Martin.	0.53 (1.37)	3/26/84	1321	0.04 (0.001)	611	27.5
				5/07/84	1410	0.01 (0.000)	578	30.0
50069350	Rio Juan Martin above mouth, PR	Lat 18 21 44, long 65 40 35 Hydrologic unit 21010005. 0.8 mi (1.2 km) downstream from bridge on Hwy 3 and 0.4 mi (0.7 km) above mouth.	2.41 (6.24)	3/26/84	1446	0.28 (0.01)	425	29.0
				5/08/84	0945	0.15 (0.004)	435	27.5
		Quebrada Fajardo basin						
50069400	Quebrada Fajardo at Hwy 194, PR	Lat 18 20 49, long 65 39 55 Hydrologic unit 21010005. At bridge on Hwy 194, 0.5 mi (0.8 km) east of Hwy 194 and Hwy 3 intersection, and 1.5 mi (2.4 km) above mouth.	1.16 (3.00)	3/26/84	1346	0.06 (0.002)	465	35.0
				5/07/84	1428	0.01 (0.000)	520	33.0
		Rio Fajardo basin						
50071200	Rio Fajardo at Vapor below Confluence, PR	Lat 18 18 28, long 65 40 10 Hydrologic unit 21010005. 1.7 mi (2.8 km) southwest of Plaza de Fajardo and 1.4 mi (2.3 km) upstream from bridge on Hwy 3.	19.4 (50.2)	3/27/84	1059	6.57 (0.19)	125	29.0
				5/07/84	1556	2.31 (0.07)	127	25.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Rio Fajardo basin						
50072000	Rio Fajardo at Fajardo, PR	Lat 18 19 11, long 65 39 07 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) south of Fajardo, and 2.5 mi (4.0 km) upstream from mouth.	21.6 (55.9)	3/27/84	0959	8.72 (0.25)	150	26.5
				5/07/84	1650	3.18 (0.09)	175	25.0
50072600	Quebrada Mata Redonda near Fajardo, PR	Lat 18 19 34, long 65 39 00 Hydrologic unit 21010005. At bridge on Hwy 3, 1.2 mi (2.0 km) south of Plaza de Fajardo, and 1.7 mi (2.7 km) above junction with Rio Fajardo.	1.34 (3.47)	3/27/84	1205	0.85 (0.02)	125	29.5
				5/07/84		DRY	-	-
		Rio Demajagua basin						
50072700	Rio Demajagua at Demajagua, PR	Lat 18 17 40, long 65 39 21 Hydrologic unit 21010005. At bridge on Hwy 3, 200 ft (61 m) south of Hwy 3 and Hwy 982 intersection, and 0.3 mi (0.5 km) above mouth.	1.61 (4.17)	3/27/84	1326	0.16 (0.005)	326	29.0
				5/08/84	1106	0.01 (0.000)	415	29.0
		Quebrada Ceiba basin						
50072800	Quebrada Ceiba at Ceiba, PR	Lat 18 16 25, long 65 39 25 Hydrologic unit 21010005. At bridge on Hwy 3, 0.8 mi (1.3 km) northeast of Plaza de Ceiba, and 0.8 mi (1.3 km) above mouth.	2.15 (5.57)	3/28/84	0826	1.18 (0.03)	415	26.5
				5/08/84	1229	1.00 (0.03)	480	30.0
		Quebrada Aguas Claras basin						
50072900	Quebrada Aguas Claras near Ceiba, PR	Lat 18 16 33, long 65 38 20 Hydrologic unit 21010005. At bridge on Hwy 979 and 0.5 mi (0.9 km) above mouth.	0.83 (2.15)	3/27/84	1349	0.25 (0.01)	376	31.0
				5/08/84	1136	0.24 (0.01)	285	32.0
		Rio Daguao basin						
50073200	Rio Daguao at Daguao, PR	Lat 18 13 42, long 65 40 39 At railroad bridge, 0.1 mi (0.2 km) downstream from bridge on Hwy 3, 0.3 mi (0.5 km) east of Daguao, and 2.8 mi (4.5 km) upstream from mouth.	2.26 (5.85)	3/28/84	0903	0.40 (0.01)	508	25.0
				5/08/84	1325	0.25 (0.01)	505	28.0
50073300	Rio Daguao above mouth, PR	Lat 18 13 36, long 65 39 31 Hydrologic unit 21010005. At bridge 650 ft (200 m) downstream from bridge on Langley Drive and 0.9 mi (1.4 km) above mouth.	4.29 (11.11)	3/27/84	1411	NO FLOW	1130	30.0
				5/08/84	1148	NO FLOW	1320	28.5
		Quebrada Palma basin						
50073400	Quebrada Palma at Daguao, PR	Lat 18 13 16, long 65 41 30 Hydrologic unit 21010005. At bridge on Hwy 3, 0.8 mi (1.3 km) southwest of Daguao, and 1.7 mi (2.7 km) upstream from mouth.	4.84 (12.54)	3/28/84	0937	0.99 (0.03)	329	25.0
				5/08/84	1350	0.38 (0.01)	345	26.5

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Quebrada Botija basin						
50073500	Quebrada Botija at Hwy. 31, PR	Lat 18 12 55, long 65 42 25 Hydrologic unit 21010005. At bridge on Hwy 31, 500 ft (152 m) upstream from bridge on Hwy 3, and 1.6 mi (2.6 km) above mouth.	1.10 (2.85)	3/28/84	1000	0.14 (0.004)	359	25.5
				5/08/84	1627	0.02 (0.001)	457	27.0
		Rio Santiago basin						
50076000	Rio Santiago at Naguabo, PR	Lat 18 12 57, long 65 43 41 Hydrologic unit 21010005. At bridge on Hwy 31, 0.3 mi (0.5 km) northeast of Naguabo, 0.4 mi (0.6 km) downstream from Quebrada Grande, and 2.2 mi (3.5 km) upstream from mouth.	4.99 (12.92)	3/29/84	1102	1.33 (0.04)	204	30.5
				5/08/84	1523	0.45 (0.01)	226	33.5
50076010	Tributary to Rio Santiago at Hwy 192, PR	Lat 18 12 34, long 65 43 33 Hydrologic unit 21010005. At bridge on Hwy 192 and 0.7 mi (1.1 km) above junction with Rio Santiago.	1.08 (2.80)	3/28/84	1149	NO FLOW	526	25.5
				5/08/84	1535	NO FLOW	368	29.5
		Rio Blanco basin						
50077000	Rio Blanco at Rio Blanco, PR	Lat 18 13 09, long 65 46 57 Hydrologic unit 21010005. At bridge on Hwy 31 and 0.4 mi (0.6 km) east of Rio Blanco.	17.6 (45.6)	3/29/84	1345	3.88 (0.11)	173	28.0
				5/07/84	1610	9.47 (0.27)	165	30.0
50077500	Rio Blanco below La Fe, PR	Lat 18 12 17, long 65 45 31 Hydrologic unit 21010005. 1.9 mi (3.0 km) downstream from bridge on Hwy 31 and 0.7 mi (1.1 km) south of Hwy 31 and Hwy 970 intersection.	20.8 (53.9)	3/29/84	1255	4.69 (0.13)	219	29.0
				5/08/84	1119	2.01 (0.06)	340	29.0
50077600	Quebrada Vaca below La Fe, PR	Lat 18 12 25, long 65 45 04 Hydrologic unit 21010005. 1.1 mi (1.8 km) downstream from bridge on Hwy 31 and 0.9 mi (1.4 km) southeast of Hwy 31 and Hwy 970 intersection.	3.47 (8.99)	3/30/84	1015	NO FLOW	354	27.5
				5/08/84	1020	NO FLOW	403	28.0
50077700	Rio Blanco at mouth, PR	Lat 18 11 17, long 65 41 47 Hydrologic unit 21010005. At bridge on Hwy 3, at mouth, and 0.8 mi (1.2 km) southwest of Hwy 3 and Hwy 192 intersection.	27.2 (70.4)	3/28/84	1155	2.67 (0.08)	5830	30.0
				5/08/84	1540	NO FLOW	38400	31.0
		Rio Anton Ruiz basin						
50078510	Rio Anton Ruiz at Pasto Viejo, PR	Lat 18 10 26, long 65 47 05 Hydrologic unit 21010005. At bridge on unimproved road, 300 ft (91 m) north of Hwy 925, and 1.5 mi (2.4 km) north of Hwy 3 and Hwy 925 intersection.	5.75 (14.89)	3/29/84	1150	0.96 (0.03)	340	30.5
				5/08/84	1258	0.11 (0.003)	430	32.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Rio Anton Ruiz basin						
50079700	Rio Anton Ruiz at mouth, PR	Lat 18 10 35, long 65 44 23 Hydrologic unit 21010005. At bridge on Hwy 3, 1.8 mi (2.9 km) southwest of Hwy 3 and Hwy 192 intersection, and 200 ft (61 m) above mouth.	a 7.99 (20.69)	3/28/84	1241	PONDED	13800	29.0
				5/08/84	1543	PONDED	25200	29.0
		Rio Humacao basin						
50081000	Rio Humacao at Las Piedras, PR	Lat 18 10 27, long 65 52 11 Hydrologic unit 21010005. On left bank about 60ft (18.3 m) off bridge on Hwy 921 (km 1.1), 0.6mi (1.0km) south-east of junction with Hwy 30, 0.8 mi (1.3 km) down-stream from Quebrada Blanca, and 0.3mi (1.3km) south of Las Piedras.	6.65 (17.22)	3/28/84	1600	9.04 (0.26)	159	25.0
				5/08/84	1515	7.04 (0.20)	218	31.0
50081500	Rio Humacao near Humacao, PR	Lat 18 09 37, long 65 50 41 Hydrologic unit 21010005.At bridge on Hwy 914 and 1.3 mi (2.1 km) northwest of Humacao.	9.23 (23.91)	3/29/84	1450	6.25 (0.18)	209	27.0
				5/09/84	1022	1.63 (0.05)	360	28.0
50081900	Quebrada Mariana at Patagonia, PR	Lat 18 08 46, long 65 49 40 Hydrologic unit 21010005.At bridge on Hwy 908 and 450 ft (137 m) above junction with Rio Humacao.	5.76 (14.92)	3/29/84	1105	5.09 (0.14)	261	29.0
				5/08/84	1405	4.03 (0.11)	315	33.0
50082500	Rio Humacao Flood Channel near mouth, PR	Lat 18 07 28, long 65 47 23 Hydrologic unit 21010005. 3.1 mi (4.9 km) southeast of Plaza de Humacao and 0.6 mi (0.9 km) above mouth.	25.1 (65.0)	3/28/84	1250	21.6 (0.61)	484	33.0
				5/09/84	1227	16.1 (0.46)	540	30.0
		Rio Candelero basin						
50082600	Rio Candelero at Hwy 906, PR	Lat 18 06 17, long 65 48 34 Hydrologic unit 21010005.At bridge on Hwy 906, 1.4 mi (2.2 km) downstream from bridge on Hwy 3, and 1.7 mi (2.7 km) above mouth.	3.65 (9.45)	3/28/84	1140	0.66 (0.02)	269	33.0
				5/09/84	1337	0.44 (0.01)	372	30.0
50082700	Rio Candelero at mouth, PR	Lat 18 06 09, long 65 47 43 Hydrologic unit 21010005.At bridge on unimproved road, 1.3 mi (2.1 km) downstream from bridge on Hwy 906, and 0.4 mi (0.7 km) above mouth.	4.77 (12.35)	3/28/84	1100	0.44 (0.01)	295	34.0
				5/09/84	1410	DRY	-	-
		Rio Guayanes basin						
50082800	Rio Guayanes near Colonia Laura, PR	Lat 18 04 55, long 65 57 32 Hydrologic unit 21010005.On left bank, 1000 ft (305 m) south of Hwy 182, 4.5 mi (7.2km) west of Colonia Laura, and 5.8 mi (9.3 km) north-northeast of Yabucoa.	4.69 (12.15)	3/29/84	0930	12.3 (0.35)	153	24.0
				5/10/84	1336	9.05 (0.26)	152	27.5

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Rio Guayanes basin						
50082810	Rio Guayanes below Rio Arenas, PR	Lat 18 04 44, long 65 56 54 Hydrologic unit 21010005. 100 ft (30 m) below junction with Rio Arenas and 2.3 mi (4.6 km) above junction with Quebrada Guayabo.	7.44 (19.27)	3/29/84	-	NO MEAS	-	-
				5/08/84	-	NO MEAS	-	-
50083400	Rio Guayanes at Calabazas, PR	Lat 18 03 33, long 65 54 03 Hydrologic unit 21010005. At bridge on Hwy 182 and 1.4 mi (2.2 km) above junction with Rio Limones.	17.2 (44.5)	3/29/84	1052	22.2 (0.63)	169	25.5
				5/08/84	1105	16.4 (0.46)	173	27.0
50084000	Rio Limones near Yabucoa, PR	Lat 18 04 35, long 65 53 42 Hydrologic unit 21010005. At bridge on Hwy 906, 1.2 mi (2.0 km) upstream from Rio Guayanes, and 2.0 mi (3.2 km) northwest of Yabucoa.	7.89 (12.70)	3/29/84	1312	12.4 (0.35)	169	29.0
				5/08/84	0814	9.12 (0.26)	174	24.5
50085000	Rio Guayanes at Yabucoa, PR	Lat 18 03 42, long 65 52 33 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) downstream from Rio Limones, and 0.7 mi (1.1 km) north of Yabucoa.	25.5 (65.6)	3/29/84	1212	35.6 (1.01)	175	26.5
				5/10/84	1532	30.2 (0.86)	172	31.0
50085100	Rio Guayanes at Central Roig, PR	Lat 18 03 57, long 65 52 22 Hydrologic unit 21010005. At abandonend lake control structure, 0.2 mi (0.3 km) northeast of Central Roig, 1.0 mi (1.6 km) downstream from Rio Limones, and 1.0 mi (1.6 km) northeast of Yabucoa.	26.6 (68.9)	3/27/84	1010	31.1 (0.88)	169	23.5
				5/10/84	1427	26.5 (0.75)	177	26.5
50085700	Rio Guayanes near mouth near Playa de Guayanes, PR	Lat 18 04 16, long 65 50 14 Hydrologic unit 21010005. At dirt road crossing, south of Hwy 906, and 3.1 mi (5.0 km) northeast of Yabucoa.	27.6 (71.5)	3/27/84	1245	28.5 (0.81)	151	29.0
				5/10/84	1236	29.7 (0.84)	152	30.5
50086000	Rio del Ingenio near Yabucoa, PR	Lat 18 05 03, long 65 51 27 Hydrologic unit 21010005. At bridge on Hwy 3, 0.2 mi (0.3 km) upstream from Quebrada Cortadera and Aguacate, and 2.6 mi (4.2 km) northeast of Yabucoa.	2.46 (6.37)	3/27/84	1140	2.64 (0.07)	190	28.5
				5/09/94	1556	1.97 (0.05)	220	29.5
50086300	Rio del Ingenio near Playa de Guayanes, PR	Lat 18 04 20, long 65 50 02 Hydrologic unit 21010005. 1.8 mi (2.9 km) downstream from bridge on Hwy 3 and 0.6 mi (1.0 km) above junction with Rio Guayanes.	11.5 (29.8)	3/27/84	1315	5.18 (0.15)	248	32.0
				5/10/84	1134	2.95 (0.08)	373	32.5
50086500	Rio Guayanes at Playa de Guayanes, PR	Lat 18 03 45, long 65 49 42 Hydrologic unit 21010005. At old railroad crossing, 0.2 mi (0.3 km) from mouth, 0.4 mi (0.6km) west of Playa de Guayanes, and 3.5 mi (5.6 km) northeast of Yabucoa.	34.0 (88.1)	3/28/84	0915	40.6 (1.15)	182	26.5
				5/10/84	1020	22.4 (0.63)	210	28.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Cano Santiago basin						
50087100	Cano Santiago at Hwy 3, PR	Lat 18 03 25, long 65 52 33 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) north of Plaza de Yabucoa, and 0.3 mi (0.5 km) below junction with Quebrada Aguas Largas.	3.81 (9.87)	3/29/84	1358	1.79 (0.05)	289	27.0
				5/09/84	0937	0.90 (0.03)	297	26.0
50087200	Cano Santiago near Central Roig, PR	Lat 18 03 18, long 65 50 59 Hydrologic unit 21010005. At service road and railroad bridge, 1.8 mi (2.9 km) east of Central Roig, and 2.0 mi (3.2 km) east of Yabucoa.	6.04 (15.64)	3/27/84	1055	4.18 (0.12)	370	26.0
				5/10/84	1536	2.40 (0.07)	475	30.0
		Rio Maunabo basin						
50091000	Rio Maunabo at Maunabo, PR	Lat 18 00 24, long 65 54 19 Hydrologic unit 21010005. At bridge on Hwy 3, 0.4 mi (0.6 km) southwest of Maunabo, and 1.3 mi (2.1 km) upstream from mouth.	12.4 (32.1)	3/28/84	0937	9.61 (0.27)	244	25.5
				5/08/84	1426	6.05 (0.17)	243	34.0
		Rio Jacaboa basin						
50091500	Rio Jacaboa at Hacienda San Isidro, PR	Lat 17 58 48, long 65 53 03 Hydrologic unit 21010004. At bridge on Hwy 3, 0.4 mi (0.6km) upstream from mouth, 0.4 mi (0.6 km) east of Hacienda San Isidro, and 4.8 mi (7.7 km) southwest of Maunabo.	5.23 (13.5)	3/28/84	1046	0.68 (0.02)	301	28.0
				5/08/84	1555	0.08 (0.002)	356	33.0
		Rio Chico basin						
50091800	Rio Chico at Providencia, PR	Lat 17 59 16, long 66 00 18 Hydrologic unit 21010004. At flat low bridge 200 ft (61 m) south of Hwy 3, 0.5 mi (0.8 km) above mouth, and 1.5 mi (2.4 km) southeast of Patillas.	4.93 (12.77)	3/28/84	1117	0.07 (0.002)	1110	34.0
				5/09/84	1715	0.43 (0.01)	995	30.5
		Rio Grande de Patillas basin						
50091950	Rio Grande de Patillas below Quebrada Sonadora, PR	Lat 18 03 48, long 66 02 57 Hydrologic unit 21010004. 1,300 ft (395 m) downstream from bridge on Hwy 184 and 1,000 ft (305 m) below junction with Quebrada Sonadora.	8.75 (22.66)	3/29/84	1242	8.62 (0.24)	136	24.5
				5/08/84	1132	9.14 (0.26)	156	25.0
50094200	Rio Grande de Patillas at Patillas, PR	Lat 18 00 15, long 66 01 27 Hydrologic unit 21010004. At bridge on Hwy 3, 0.7 mi (1.1 km) west of Patillas, and 1.9 mi (3.1km) upstream from mouth.	27.9 (72.3)	3/29/84		DRY		
				5/08/84	1840	1.45 (0.04)	243	28.0
50094300	Rio Grande de Patillas at Providencia, PR	Lat 17 59 20, long 66 00 47 Hydrologic unit 21010004. At abandoned railroad bridge, 0.5 mi (0.8 km) above mouth, and 0.6 mi (1.0 km) west of Providencia.	29.0 (75.1)	3/27/84	1312	1.56 (0.04)	338	30.0
				5/09/84	1325	1.01 (0.03)	412	33.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Rio Nigua basin						
50094500	Rio Nigua at Arroyo, PR	Lat 17 53 10, long 66 03 41 Hydrologic unit 21010004. At bridge on Hwy 178, 0.2 mi (0.3 km) north of Arroyo, and 3.7 mi (6.0 km) east of Guayama.	8.04 (20.82)	3/27/84	1105	0.12 (0.003)	1230	35.0
				5/09/84	1410	0.03 (0.001)	750	37.0
		Quebrada Salada basin						
50094510	Quebrada Salada near Arroyo, PR	Lat 18 58 50, long 66 04 23 Hydrologic unit 21010004. At bridge on Hwy 3 and 0.9 mi (1.4 km) upstream from mouth.	0.76 (1.97)	3/27/84	1025	0.04 (0.001)	2230	27.5
				5/09/84	1448	0.06 (0.002)	1460	33.0
		Quebrada Corazon basin						
50094520	Quebrada Corazon near Arroyo, PR	Lat 18 58 58, long 66 04 41 Hydrologic unit 21010004.At bridge on Hwy 3 and 1.0 mi (1.6 km) above mouth.	4.29 (11.11)	3/27/84	0955	0.66 (0.02)	738	25.5
				5/09/84	1530	1.12 (0.03)	440	27.5
		Rio Guamani basin						
50095500	Rio Guamani near Guayama, PR	Lat 17 57 30, long 66 08 20 Hydrologic unit 21010004. At railroad bridge, 0.5 mi (0.8 km) downstream from Hwy 3, 1.2 mi (1.9 km) upstream from mouth, and 2.5 mi (4.0 km) southeast of Guayama.	12.3 (31.9)	3/30/84		DRY	-	-
		Rio Melania basin						
50095900	Rio Melania near Jobes, PR	Lat 17 57 51, long 66 59 30 Hydrologic unit 21010004. 0.6 mi (1.0 km) upstream from bridge on Hwy 3.	3.51 (9.09)	3/30/84	1445	0.55 (0.02)	592	29.0
		Rio Seco basin						
50097800	Rio Seco near Central Guamani, PR	Lat 17 58 06, long 66 10 52 Hydrologic unit 21010004.At bridge on Hwy 3, 0.2 mi (0.3 km) north of Central Guamani, and 1.2 mi (1.9 km) northeast of Jobes.	11.1 (28.7)	3/30/84		DRY	-	-
		Rio Salinas (Nigua) basin						
50100700	Rio Majada at Rabo del Buey, PR	Lat 18 02 17, long 66 14 27 Hydrologic unit 21010004.At bridge on Hwy 1, at Rabo del Buey, 200 ft (61 m) upstream from Rio Lapa, and 5.6 mi (9.0 km) northeast of Salinas.	22.2 (57.5)	3/30/84		NO FLOW	-	-
50102000	Rio Salinas at Salinas, PR	Lat 17 58 42, long 66 18 17 Hydrologic unit 21010004.At bridge on Hwy 1 and 0.4 mi (0.6 km) west of Salinas Plaza.	52.4 (135.7)	3/29/84		DRY	-	-

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DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER*	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Rio Jueyes basin						
50103000	Rio Jueyes near Jauca, PR	Lat 17 59 45, long 66 20 20 Hydrologic unit 21010004.At bridge on Hwy 1, 1.8 mi (2.9 km) east of Jauca, and 2.7 mi (4.3 km) west of Salinas Plaza.	8.56 (22.17)	3/29/84		DRY	-	-
		Rio Coamo basin						
50107000	Rio Coamo near Santa Isabel, PR	Lat 17 59 36, long 66 25 10 Hydrologic unit 21010004.At bridge on Hwy 1, at Velazquez, and 1.1 mi (1.8 km) northwest of Santa Isabel Plaza.	69.0 (178.7)	3/29/84		DRY	-	-
		Rio Descalabrado basin						
50108500	Rio Descalabrado near Santa Isabel, PR	Lat 17 59 34, long 66 26 35 Hydrologic unit 21010004.At bridge on Hwy 1, 0.9 mi (1.4 km) upstream from mouth, and 3.1 mi (5.0 km) northwest of Santa Isabel.	18.1 (46.9)	3/29/84		DRY	-	-
		Rio Canas basin						
50109500	Rio Canas near Santa Isabel, PR	Lat 17 59 39, long 66 28 35 Hydrologic unit 21010004.At bridge on Hwy 1, 0.5 mi (0.8 km) from mouth, 0.6 mi (1.0 km) east of Pastillo, and 5.1 mi (8.2 km) northwest of Santa Isabel Plaza.	6.38 (16.52)	3/29/84		DRY	-	-
		Rio Jacaguas basin						
50112000	Rio Jacaguas at Arus, PR	Lat 18 00 05, long 66 31 50 Hydrologic unit 21010004.At bridge on Hwy 1, at Arus, and 4.0 mi (6.4 km) south of Juana Diaz.	59.3 (153.6)	3/29/84		DRY	-	-
		Rio Inabon basin						
50113450	Rio Inabon near Arus, PR	Lat 18 00 22, long 66 33 13 Hydrologic unit 21010004. At bridge on Hwy 1, 0.9 mi (1.4 km) east of Ponce Municipal Airport terminal, and 1.7 mi (2.7 km) east of Arus.	30.2 (78.2)	3/29/84		NO FLOW	-	-
		Rio Bucana basin						
50114400	Rio Bucana at Ponce, PR	Lat 18 00 28, long 66 35 36 Hydrologic unit 21010004. At bridge on Hwy 1, 0.2mi (0.3 km) east of intersection of Hwys 1 and 2, 1.5mi (2.4km) east of Plaza Degetau in Ponce, and 3.1mi (5.0km) upstream from mouth.	27.3 (70.7)	3/29/84	1715	0.73 (0.02)	517	29.0

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DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Rio Portugues basin						
50116500	Rio Portugues at Hwy 2 by pass at Ponce, PR	Lat 17 59 52, long 66 36 52 Hydrologic unit 21010004. On pier at bridge on Hwy 2 by pass, 1.1 mi (1.8 km) south of Plaza Degetau, and 2.0 mi (3.2 km) upstream from mouth.	20.5 (53.1)	3/29/84	1410	1.29 (0.04)	592	34.0
		Rio Matilde basin						
50116970	Rio Canas below Las Americas Avenue, PR	Lat 18 00 37, long 66 38 23 Hydrologic unit 21010004. 0.5 mi (0.8 km) upstream from junction with Rio Pastillo.	8.39 (21.73)	3/29/84	1615	5.46 (0.15)	750	31.0
50119200	Quebrada del Agua at Playa de Ponce, PR	Lat 17 59 13, long 66 39 22 Hydrologic unit 21010004. 700 ft (213 m) upstream from junction with Rio Matilde.	6.45 (16.71)	3/29/84		DRY	-	-
		Rio Tallaboa basin						
50122000	Rio Tallaboa at Tallaboa, PR	Lat 18 00 31, long 66 43 47 Hydrologic unit 21010004.At bridge at Hacienda Dolores, 700 ft (213 m) upstream from Hwy 2, 0.8 mi (1.3 km) northwest of Tallaboa, and 7.6 mi (12.2 km) west of Plaza Degetau in Ponce.	31.50 (81.6)	3/29/84	1140	3.48 (0.10)	318	29.5
		Rio Macana basin						
50122900	Rio Macana at Magas Arriba, PR	Lat 18 01 00, long 66 45 57 Hydrologic unit 21010004. 1.9 mi (2.8 km) east of Plaza de Guayanilla, 200 ft (60 m) upstream from bridge on Hwy 2, and 0.6 mi (1.0 km) upstream from mouth.	8.96 (23.21)	3/29/84		DRY	-	-
		Rio Yauco basin						
50126500	Rio Yauco at Pueblo Sur at Yauco, PR	Lat 18 02 08, long 66 50 51 Hydrologic unit 21010004.At bridge on Hwy 2, 0.1 mi (0.2 km) east of Yauco, and 0.6 mi (1.0 km) upstream from Quebrada Berrenchin.	33.0 (85.5)	3/28/84		DRY	-	-
		Rio Loco basin						
50129200	Quebrada Susua at Palomas, PR	Lat 18 01 19, long 66 52 28 Hydrologic unit 21010004.At bridge on Hwy 2, 0.5 mi (0.8 km) north of Palomas, and 1.9 mi (3.1 km) southwest of Yauco.	3.23 (8.37)	3/28/84		DRY	-	-
50129500	Rio Loco near Guanica, PR	Lat 17 59 38, long 66 54 59 Hydrologic unit 21010004. 90 ft (27 m) upstream from sheet piling drop structure, 900 ft (274 m) upstream from Lajas Drainage Canal, 7.2 mi (11.6 km) downstream from Lago Loco, and 1.5 mi (2.4 km) north of Guanica.	21.0 (54.4)	3/28/84	1540	1.68 (0.05)	412	30.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	STREAM-FLOW cfs (cms)	SPE-CIFIC CONDUC-TANCE umhos	TEMPER-ATURE deg C
		Quebrada Boqueron basin						
50130000	Quebrada Boqueron at Boqueron, PR	Lat 18 01 40, long 67 09 35 Hydrologic unit 21010004. At bridge on Hwy 101 and 0.9 mi (1.4 km) above mouth.	4.35 (11.27)	3/28/84	1325	6.81 (0.19)	291	26.5
		Rio Guanajibo basin						
50132010	Rio Guanajibo below San German, PR	Lat 18 05 28, long 67 02 33 Hydrologic unit 21010003. 0.5 mi (0.8 km) north of Plaza de San German and 1,500 ft (457 m) downstream from bridge on Hwy 360.	36.1 (93.5)	3/28/84	1110	3.95 (0.11)	517	28.0
		Rio Yaguez basin						
501[illegible]9900	Rio Yaguez at Balboa, PR	Lat 18 12 13, long 67 07 55 Hydrologic unit 21010003. 1,200 ft (366 m) upstream from bridge on Balboa St. and 1.6 mi (2.6 km) upstream from mouth.	12.2 (31.6)	3/27/84	1740	6.53 (0.18)	320	26.0
		Rio Grande de Anasco basin						
50146070	Rio Grande de Anasco at Anasco Arriba, PR	Lat 18 15 21, long 66 08 33 Hydrologic unit 21010003. 0.8 mi (1.2 km) south of Anasco and 3.0 mi (4.8 km) upstream from mouth.	176 (456)	3/27/84		NO MEAS	-	-
		Rio Grande basin						
50146200	Rio Grande near Rincon, PR	Lat 18 22 06, long 67 13 56 Hydrologic unit 21010003. At bridge on Hwy 115, 1.2 mi (1.9 km) upstream from mouth, and 2.2 mi (3.5 km) northeast of Rincon.	2.83 (7.33)	3/27/84	1320	0.41 (0.01)	649	25.0
		Rio Ingenio basin						
50146400	Rio Ingenio near Aguada, PR	Lat 18 22 50, long 67 12 34 Hydrologic unit 21010003. At bridge on unimproved road, 0.3 mi (0.5 km) upstream from confluence with Rio Culebra, 0.7 mi (1.1 km) upstream from mouth of Rio Guayabo, and 1.4 mi (2.3 km) west of Aguada.	6.22 (16.11)	3/27/84	1155	3.57 (0.10)	470	25.0
		Rio Culebra basin						
50146600	Rio Culebra near Aguada, PR	Lat 18 22 26, long 67 11 35 Hydrologic unit 21010003. At bridge on Hwy 411, 0.6 mi (1.0 km) south of Aguada, 1.5 mi (2.4 km) upstream from confluence with Rio Ingenio, and 1.9 mi (3.1 km) upstream from mouth of Rio Guayabo.	3.70 (9.58)	3/27/84	1020	1.67 (0.05)	388	24.5
		Rio Culebrinas basin						
50149100	Rio Culebrinas near Aguada, PR	Lat 18 24 03, long 67 09 40 Hydrologic unit 21010003. At bridge on Hwy 2 and 2.3 mi (3.7 km) northeast of Aguada Plaza.	97.0 (251.2)	3/27/84		NO MEAS	-	-

a Drainage area does not include coastal undefined drainage.

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DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather record, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1984

Station number	Station name	Location	Drainage area sq mi (sq km)	Period of record	Annual maximum		
					Date	Gage height ft (m)	Discharge cu ft/s (cu m/s)
		Rio Portugues basin					
50115900	Rio Portugues at Highway 14 at Ponce, PR	Lat 18 01 09, long 66 36 26, on left downstream side of Highway 14 bridge, 1.7 mi (2.7 km) downstream from Rio Chiquito, and 0.6 mi (0.97 km) northeast of Degetau Plaza in Ponce.	18.6 (48.2)	1963-84		< 8.82 (<2.688)	< 1,700 (<48.1)

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

RIO GUAJATACA BASIN--CONTINUED

50010720 - LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18 22 05 LONG 066 54 36)

DATE	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	BIOMASS CHLORO-PHYLL RATIO PLANK-TON (UNITS)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)
DEC , 1983										
01...	<.10	<.01	--	.70	--	--	.02	.00	2.8	.60
APR , 1984										
09...	.40	.08	.62	.70	1.1	4.9	.03	.00	12	<.10
JUL										
23...	<.10	<.01	--	.20	--	--	.02	.00	2.6	<.10

50010790 - LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)
DEC , 1983												
01...	3.6	5.9	.2	1.4	125	11	5.0	.20	6.1	160	4	--
01...	3.8	6.0	.2	1.5	125	11	8.0	.20	9.1	160	--	--
APR , 1984												
09...	4.0	6.2	.3	1.5	121	11	8.9	.10	6.4	150	<1	--
09...	4.1	6.4	.2	1.6	138	8.8	8.9	.10	7.7	170	--	--
JUL												
23...	3.8	5.7	.2	1.9	111	15	9.2	.10	6.5	150	4	--
23...	3.4	5.1	.2	1.7	144	15	5.9	.10	6.5	180	--	--

RIO GRANDE DE ARECIBO BASIN--CONTINUED

50020050 - LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)
NOV , 1983												
30...	4.3	6.3	.4	1.1	62	4.7	--	.10	17	--	8	--
30...	4.4	5.8	.3	1.4	91	12	5.6	.10	17	120	--	--
APR , 1984												
04...	5.0	6.4	.4	1.0	71	2.7	3.7	<.10	19	98	8	--
04...	4.6	6.0	.3	1.1	75	1.0	5.7	<.10	19	100	--	--
JUL												
20...	4.9	6.3	.4	1.1	70	4.2	6.2	<.10	16	98	2	--
20...	4.7	6.1	.3	1.2	89	2.5	5.8	<.10	20	110	--	--

RIO GUAJATACA BASIN--CONTINUED

50010790 - LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	BIOMASS CHLORO-PHYLL RATIO PLANK-TON (UNITS)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)
DEC , 1983											
01...	<.01	<.10	<.01	--	1.1	--	--	.01	.00	1.8	.50
01...	--	--	--	--	--	--	--	--	--	--	--
APR , 1984											
09...	<.01	<.10	<.01	--	.40	--	--	<.01	.00	4.7	<.10
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
23...	<.01	<.10	<.01	--	.30	--	--	.03	.00	3.6	<.10
23...	--	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

Water-quality partial-record stations are particular sites where chemical-quality , biological , and or sediment data are collected systematically over a period of years for use in hydrologic analyses. The data are collected usually less than quarterly.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

RIO GUAJATACA BASIN

50010720 - LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18 22 05 LONG 066 56 36)

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)
DEC , 1983											
01...	0825	1.00	269	7.9	25.5	7.5	94	K9	60	--	<.01
APR , 1984											
09...	1445	1.00	303	7.8	28.5	7.7	102	110	74	.38	.02
JUL											
23...	1540	1.00	278	8.2	28.5	8.3	109	K6	K1	--	<.01

50010790 - LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
DEC , 1983												
01...	0915	1.00	277	7.5	26.0	7.4	93	K1	28	130	7	47
01...	0920	60.0	332	7.9	24.5	.1	1	--	--	140	13	49
APR , 1984												
09...	1545	1.00	270	8.1	27.0	8.4	108	K11	61	130	6	46
09...	1610	44.0	291	7.6	25.0	.0	0	--	--	140	1	49
JUL												
23...	1345	1.00	262	8.5	28.5	9.7	128	K4	<1	120	7	41
23...	1415	62	312	7.5	24.5	.4	5	--	--	150	5	56

RIO GRANDE DE ARECIBO BASIN

50020050 - LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
NOV , 1983												
30...	1250	1.00	147	7.4	23.0	7.0	89	K4	K4	60	0	17
30...	1305	97.5	180	6.9	20.5	.0	0	--	--	66	0	19
APR , 1984												
04...	1530	1.00	148	8.2	25.0	8.3	110	K11	K9	66	0	18
04...	1535	70.0	150	6.9	21.0	.0	0	--	--	64	0	18
JUL												
20...	1500	1.00	154	8.0	25.5	8.3	111	76	K13	63	0	17
20...	1515	61	193	7.1	21.0	.4	5	--	--	69	0	20

K = non-ideal count

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RIO GRANDE DE ARECIBO BASIN--CONTINUED

50020050 - LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	BIOMASS CHLORO-PHYLL RATIO PLANK-TON (UNITS)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)
NOV , 1983											
30...	<.01-	<.10	<.01	--	.80	--	--	<.01	.00	5.4	1.1
30...	--	--	--	--	--	--	--	--	--	--	--
APR , 1984											
04...	.01	<.10	.07	.33	.40	--	--	<.01	.00	2.5	.90
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
20...	<.01	<.10	.36	.34	.40	--	--	<.01	.00	1.2	<.10
20...	--	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE ARECIBO BASIN--CONTINUED

50025110 - LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO,PR (LAT 18 19 15 LONG 066 40 11)

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)
DEC , 1983											
01...	1235	1.00	203	8.2	27.5	8.7	111	44	32	.49	.01
APR , 1984											
05...	0945	1.00	218	8.0	27.0	7.3	93	25	K7	--	.01
JUL											
17...	1630	1.00	222	9.3	29.0	12.2	160	K14	K2	--	<.01

RIO GRANDE DE ARECIBO BASIN--CONTINUED

50027090 - LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18 20 09 LONG 066 40 04)

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
DEC , 1983												
01...	1315	1.00	186	7.9	27.0	8.2	104	K14	59	69	3	18
01...	1320	83.0	189	6.9	24.5	1.3	16	--	--	71	0	19
APR , 1984												
10...	1040	1.00	218	8.6	27.5	10.0	128	K5	K6	81	3	21
10...	1055	81.0	208	7.0	24.5	.0	0	--	--	80	0	21
JUL												
17...	1530	1.00	219	9.3	29.5	13.1	173	K7	K5	77	3	20
17...	1540	83	208	7.3	25.5	.3	4	--	--	77	0	21

RIO DE LA PLATA BASIN

50039900 - LAGO CARITE NO.3 ON RIO DE LA PLATA NR CAYEY,PR (LAT 18 05 04 LONG 066 06 03)

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)
DEC , 1983											
02...	1050	1.00	103	7.0	24.0	6.8	86	K5	88	--	<.01
APR , 1984											
11...	1140	1.00	106	7.6	25.0	7.8	95	K10	26	--	<.01
JUL											
19...	1425	1.00	103	8.4	27.0	9.5	127	K5	<1	—	<.01

K = non-ideal count

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ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

50039950 - LAGO CARITE NO.1 NR DAM NR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
DEC , 1983												
02...	1030	1.00	105	7.2	24.0	6.9	87	K5	81	30	0	5.9
02...	1035	65.0	183	6.6	22.0	.1	1	--	--	30	0	5.8
APR , 1984												
11...	1120	1.00	106	7.5	25.0	7.5	91	K6	79	31	0	6.0
11...	1125	64.0	103	6.8	21.5	.0	0	--	--	26	0	5.5
JUL												
19...	1250	1.00	104	8.4	27.0	10.1	135	K3	<1	28	0	5.2
19...	1310	60	149	6.8	22.0	.6	7	--	--	31	0	6.6

RIO GRANDE DE ARECIBO BASIN--CONTINUED

50025110 - LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO,PR (LAT 18 19 15 LONG 066 40 11)

DATE	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	BIOMASS CHLOROPHYLL RATIO PLANKTON (UNITS)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)
DEC , 1983										
01...	.50	<.01	--	1.4	1.9	8.4	.04	.00	5.0	1.1
APR , 1984										
05...	<.10	<.01	--	.70	--	--	<.01	.00	6.3	<.10
JUL										
17...	<.10	.02	.48	.50	--	--	.02	.00	1.7	<.10

50027090 - LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18 20 09 LONG 066 40 04)

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)
DEC , 1983												
01...	5.8	9.9	.5	1.9	66	14	10	.20	17	120	7	--
01...	5.7	9.1	.5	1.9	72	10	9.8	.10	20	120	--	--
APR , 1984												
10...	6.9	12	.6	1.8	78	17	12	.10	11	130	4	--
10...	6.6	11	.6	1.9	79	13	11	<.10	18	130	--	--
JUL												
17...	6.6	11	.6	2.0	74	17	11	.10	2.6	110	16	--
17...	6.0	9.6	.5	2.2	80	12	10	.10	13	120	--	--

RIO DE LA PLATA BASIN--CONTINUED

50039900 - LAGO CARITE NO.3 ON RIO DE LA PLATA NR CAYEY,PR (LAT 18 05 04 LONG 066 06 03)

DATE	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	BIOMASS CHLOROPHYLL RATIO PLANKTON (UNITS)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)
DEC , 1983										
02...	<.10	<.01	--	1.1	--	--	.01	.00	6.8	2.4
APR , 1984										
11...	<.10	<.01	--	.50	--	--	.09	.00	3.2	.40
JUL										
19...	<.10	<.01	--	.20	--	--	<.01	.00	2.4	<.10

K = non-ideal count

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ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)
RIO DE LA PLATA BASIN--CONTINUED												
50039950 - LAGO CARITE NO.1 NR DAM NR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)												
DEC , 1983												
02...	3.6	8.7	.7	.70	36	3.5	9.5	<.10	18	71	5	--
02...	3.7	8.6	.7	.80	33	3.7	9.4	<.10	19	71	--	--
APR , 1984												
11...	3.8	8.6	.7	.30	36	2.5	8.7	<.10	19	71	<1	--
11...	3.1	7.2	.6	.90	36	2.2	7.8	<.10	16	64	--	--
JUL												
19...	3.7	8.3	.7	.30	34	4.5	9.6	<.10	17	69	4	--
19...	3.6	7.4	.6	1.0	50	1.6	9.4	<.10	15	78	--	--

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	BIOMASS CHLORO-PHYLL RATIO PLANK-TON (UNITS)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)
RIO GRANDE DE ARECIBO BASIN--CONTINUED											
50027090 - LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18 20 09 LONG 066 40 04)											
DEC , 1983											
01...	<.01	.40	<.01	--	.90	1.3	5.8	.03	.00	4.0	1.4
01...	--	--	--	--	--	--	--	--	--	--	--
APR , 1984											
10...	<.01	<.10	.02	.58	.60	--	--	<.01	.00	9.5	<.10
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
17...	<.01	<.10	<.01	--	.80	--	--	<.01	.00	<.10	<.10
17...	--	--	--	--	--	--	--	--	--	--	--
RIO DE LA PLATA BASIN--CONTINUED											
50039950 - LAGO CARITE NO.1 NR DAM NR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)											
DEC , 1983											
02...	<.01	<.10	<.01	--	1.1	--	--	.010	.00	6.4	2.2
02...	--	--	--	--	--	--	--	--	--	--	--
APR , 1984											
11...	<.01	<.10	<.01	--	.60	--	--	.030	.00	3.4	.60
11...	--	--	--	--	--	--	--	--	--	--	--
JUL											
19...	<.01	<.10	.02	.48	.50	--	--	.010	.00	1.6	<.10
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)
RIO DE LA PLATA BASIN--CONTINUED											
50044400 - LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18 19 33 LONG 066 12 28)											
NOV , 1983											
29...	1115	1.00	335	8.1	26.0	7.2	89	23	66	.56	.04
APR , 1984											
03...	1500	1.00	357	7.7	27.0	7.3	92	23	66	--	<.01
JUL											
13...	1445	1.00	289	7.8	29.5	10.1	133	K130	80	.47	.03

K = non-ideal count

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DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)

50044950 - LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18 20 18 LONG 066 14 01.

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
NOV , 1983												
29...	1020	1.00	297	7.3	26.0	4.9	61	52	50	110	3	26
29...	1030	13.0	300	7.3	25.5	2.1	26	--	--	110	0	26
APR , 1984												
03...	1350	1.00	307	7.0	27.0	2.9	37	62	50	130	0	31
03...	1415	75.0	284	7.0	23.0	.0	--	--	--	100	0	25
JUL												
13...	1230	1.00	350	7.5	29.5	5.5	72	64	140	130	0	31
13...	1245	78	228	7.1	24.0	.3	4	--	--	75	4	18

RIO GRANDE DE LOIZA BASIN

50057500 - LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18 16 51 LONG 066 00 35)

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)
DEC , 1983											
05...	1055	1.00	247	7.4	26.5	6.5	81	K790	170	.74	.06
APR , 1984											
06...	1250	1.00	370	7.0	27.0	8.1	103	K100	950	.31	.09
JUL											
16...	1240	1.00	274	7.6	29.0	6.0	78	K950	49	.67	.23

RIO GRANDE DE LOIZA BASIN--CONTINUED

50058900 - LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
DEC , 1983												
05...	1015	1.00	246	7.1	26.5	3.9	49	410	600	77	0	19
05...	1020	33.0	157	6.7	23.5	2.0	24	--	--	57	2	14
APR , 1984												
06...	1145	1.00	280	7.2	27.5	7.7	98	K30	K82	80	0	19
06...	1200	24.0	300	6.9	26.5	.2	3	--	--	75	0	18
JUL												
16...	1330	1.00	256	7.7	29.5	8.3	109	110	62	75	0	19
16...	1350	30	209	6.9	26.0	.5	6	--	--	60	0	15

RIO DE LA PLATA BASIN--CONTINUED

50044400 - LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18 19 33 LONG 066 12 28)

DATE	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	BIOMASS CHLOROPHYLL RATIO PLANKTON (UNITS)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)
NOV , 1983										
29...	.60	.16	.64	.80	1.4	6.2	.18	.00	22	3.2
APR , 1984										
03...	.10	.06	.84	.90	1.0	4.4	.14	.00	8.8	2.8
JUL										
13...	.50	.02	1.9	1.9	2.4	11	.19	.00	12	<.10

K = non-ideal count

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ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

50044950 - LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18 20 18 LONG 066 14 01)

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
NOV , 1983												
29...	11	20	.9	2.7	107	15	20	.20	20	180	4	--
29...	11	15	.8	2.7	110	15	20	.20	20	180	--	--
APR , 1984												
03...	12	21	.8	1.9	133	14	23	.10	21	200	<1	--
03...	9.5	15	.7	3.1	108	9.6	21	.10	20	170	--	--
JUL												
13...	13	23	.9	3.4	134	19	26	.20	20	220	10	--
13...	7.2	14	.7	3.4	71	13	17	.20	16	130	--	--

RIO GRANDE DE LOIZA BASIN--CONTINUED

50057500 - LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18 16 51 LONG 066 00 35)

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	BIOMASS CHLORO- PHYLL RATIO PLANK- TON (UNITS)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
DEC , 1983										
05...	.80	.02	1.4	1.4	2.2	9.7	.22	.00	18	3.7
APR , 1984										
06...	.40	1.8	1.5	3.3	3.7	16	.70	.00	16	3.5
JUL										
16...	.70	.51	1.4	1.9	2.6	12	.39	.00	9.0	<.10

50058800 - LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
DEC , 1983												
05...	7.2	20	1	2.8	77	17	19	.20	23	150	8	.69
05...	5.3	14	.8	3.0	55	14	15	.20	17	120	--	--
APR , 1984												
06...	7.8	22	1	1.9	85	18	23	.20	23	170	9	.16
06...	7.3	20	1	2.1	82	17	21	.20	22	160	--	--
JUL												
16...	6.8	20	1	2.7	75	19	21	.20	27	160	7	.72
16...	5.5	12	.7	2.9	67	9.5	13	.10	19	120	--	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

RIO DE LA PLATA BASIN--CONTINUED

50044950 - LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18 20 15 LONG 066 14 01)

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	BIOMASS CHLOROPHYLL RATIO PLANKTON (UNITS)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)
NOV , 1983											
29...	<.01	<.10	<.01	--	.70	--	--	.09	.00	21	3.2
29...	--	--	--	--	--	--	--	--	--	--	--
APR , 1984											
03...	<.01	<.10	<.01	--	.70	--	--	.06	.00	4.1	.70
03...	--	--	--	--	--	--	--	--	--	--	--
JUL											
13...	<.01	<.10	.01	1.1	1.1	--	--	.14	.00	4.5	<.10
13...	--	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE LOIZA BASIN--CONTINUED

50058800 - LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	BIOMASS CHLOROPHYLL RATIO PLANKTON (UNITS)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)
DEC , 1983											
05...	.01	.70	.13	.97	1.1	1.8	8.0	.19	.00	7.1	1.4
05...	--	--	--	--	--	--	--	--	--	--	--
APR , 1984											
06...	.04	.20	.02	.48	.50	.70	3.1	.12	.00	15	2.1
06...	--	--	--	--	--	--	--	--	--	--	--
JUL											
16...	.18	.90	.05	.55	.60	1.5	6.6	.29	.00	8.5	<.10
16...	--	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)
RIO GUAJATACA BASIN										
50010790 - LAGO GUAJATACA NO.1 NEAR DAM NEAR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)										
JUL , 1984										
23...	1345	<.1	<.01	<.1	<.01	<.01	<.01	<.01	<.01	<.01
RIO GRANDE DE ARECIBO BASIN										
50020050 - LAGO GARZAS NO.1 NEAR DAM NEAR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)										
JUL , 1984										
20...	1500	<.1	<.01	<.1	<.01	<.01	<.01	<.01	<.01	<.01
50027090 - LAGO DOS BOCAS NO.1 NEAR DAM NEAR UTUADO,PR (LAT 18 20 09 LONG 066 40 04)										
JUL , 1984										
17...	1530	<.1	<.01	<.1	<.01	<.01	<.01	<.01	<.01	<.01
RIO DE LA PLATA BASIN										
50039950 - LAGO CARITE NO.1 NEAR DAM NEAR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)										
JUL , 1984										
19...	1250	<.1	<.01	<.1	<.01	<.01	<.01	<.01	<.01	<.01
50044950 - LAGO LA PLATA NO.3 NEAR DAM NEAR NARANJITO, PR (LAT 18 20 18 LONG 066 14 01)										
JUL , 1984										
13...	1230	<.1	<.01	<.1	<.01	<.01	<.01	<.01	<.01	<.01
RIO GRANDE DE LOIZA BASIN										
50058800 - LAGO LOIZA NO.7 NEAR DAM NEAR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)										
JUL , 1984										
16...	1330	<.1	<.01	<.1	<.01	<.01	<.01	.03	<.01	<.01

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
RIO GUAJATACA BASIN--CONTINUED										
50010790 - LAGO GUAJATACA NO.1 NEAR DAM NEAR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23										
JUL , 1984 23...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
RIO GRANDE DE ARECIBO BASIN--CONTINUED										
50020050 - LAGO GARZAS NO.1 NEAR DAM NEAR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)										
JUL , 1984 20...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
50027090 - LAGO DOS BOCAS NO.1 NEAR DAM NEAR UTUADO,PR (LAT 18 20 07 LONG 066 40 04)										
JUL , 1984 17...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
RIO DE LA PLATA BASIN--CONTINUED										
50039950 - LAGO CARITE NO.1 NEAR DAM NEAR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)										
JUL , 1984 19...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
50044950 - LAGO LA PLATA NO.3 NEAR DAM NEAR NARANJITO, PR (LAT 18 20 18 LONG 066 14 01)										
JUL , 1984 13...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
RIO GRANDE DE LOIZA BASIN--CONTINUED										
50058800 - LAGO LOIZA NO.7 NEAR DAM NEAR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)										
JUL , 1984 16...	<.01	<.01	<.01	<.01	<.01	.02	<.01	<.01	<.01	<.01

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ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	PARA-THION, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
RIO GUAJATACA BASIN--CONTINUED									
50010790 - LAGO GUAJATACA NO.1 NEAR DAM NEAR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)									
JUL , 1984 23...	<.01	<.10	<.1	<1	<.01	<.01	.08	<.01	<.01
50020050 - LAGO GARZAS NO.1 NEAR DAM NEAR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)									
JUL , 1984 20...	<.01	<.10	<.1	<1	<.01	<.01	<.01	<.01	<.01
50027090 - LAGO DOS BOCAS NO.1 NEAR DAM NEAR UTUADO,PR (LAT 18 20 09 LONG 066 40 04)									
JUL , 1984 17...	<.01	<.10	<.1	<1	<.01	<.01	<.01	<.01	<.01
RIO DE LA PLATA BASIN--CONTINUED									
50039950 - LAGO CARITE NO.1 NEAR DAM NEAR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)									
JUL , 1984 19...	<.01	<.10	<.1	<1	<.01	<.01	<.01	<.01	<.01
50044950 - LAGO LA PLATA NO.3 NEAR DAM NEAR NARANJITO, PR (LAT 18 20 18 LONG 066 14 01)									
JUL , 1984 13...	<.01	<.10	<.1	<1	<.01	<.01	<.01	<.01	<.01
RIO GRANDE DE LOIZA BASIN--CONTINUED									
50058800 - LAGO LOIZA NO.7 NEAR DAM NEAR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)									
JUL , 1984 16...	<.01	<.10	<.1	<1	<.01	.19	<.01	<.01	<.01

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Ground-Water Records
for
Puerto Rico

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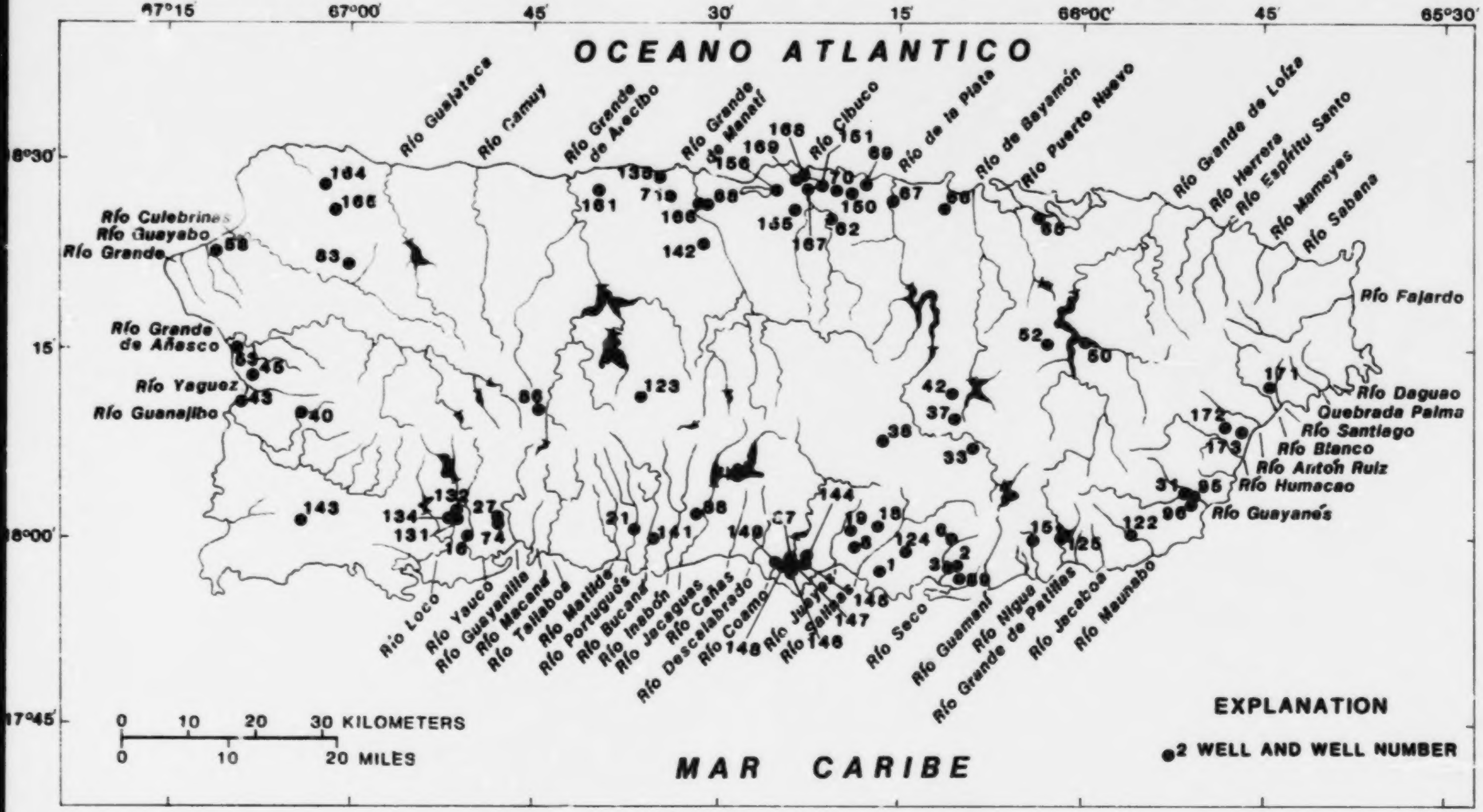
297.


67°15'
67°00'
45'
30'
15'
66°00'
45'
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18°30'
15'
18°00'
17°45'
OCEANO ATLANTICO
MAR CARIBE
Río Guajataca
Río Camuy
Río Grande de Arecibo
Río Grande de Manatí
Río Cibuco
Río de la Plata
Río de Bayamón
Río Puerto Nuevo
Río Grande de Loíza
Río Herrera
Río Espíritu Santo
Río Mameyes
Río Sabana
Río Fajardo
Río Daguao
Quebrada Palma
Río Santiago
Río Blanco
Río Antón Ruiz
Río Humacao
Río Guayanés
Río Culebrinas
Río Guayabo
Río Grande
Río Grande de Añasco
Río Yaguez
Río Guanajibo
Río Loco
Río Yauco
Río Guayanilla
Río Macaná
Río Tallaboa
Río Matilde
Río Portugués
Río Bucaná
Río Inabón
Río Jacaguas
Río Cañas
Río Descalabrado
Río Coamo
Río Jueyes
Río Salinas
Río Seco
Río Guamaní
Río Nigua
Río Grande de Patillas
Río Jacaboa
Río Maunabo
0 10 20 30 KILOMETERS
0 10 20 MILES
EXPLANATION
● 2 WELL AND WELL NUMBER

Figure 25.--Location of ground-water stations in Puerto Rico.

GROUND-WATER LEVELS

RIO GUAJATACA BASIN

182538067015900. Local number, 164.
LOCATION.--Lat 18°25'38", long 67°01'59".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Rocha Moca.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in (0.30 m), cased 0-100 ft (0-30.49 m), perforated 100-160 ft (30.49-48.78 m), diameter 10 in (0.25 m), cased 0-140 ft (0-42.68 m), perforated 140-200 ft (42.68-61.0 m), gravel packed 120-200 ft (36.58-61.0 m). Depth 200 ft (61.0 m).
DATUM.--Altitude of land-surface datum is about 787 ft (240 m) above mean sea level. Measuring point: Upper edge of 1.5 in (0.04 m) pipe on pump base, 1.40 ft (0.43 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--January 18, 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 144.7 ft (44.12 m) below land-surface datum, Nov. 3, 1983; lowest water level measured, 176.1 ft (53.59 m) below land-surface datum, Feb. 18, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	[a]148.4	Jan. 11	[a]148.5	Apr. 4	[a]148.6	July 11	[a]146.7
Nov. 3	[a]144.7	Feb. 8	148.2	May 3	[a]151.3	Aug. 27	[a]148.1
Dec. 7	[a]147.4	Mar. 5	148.3	June 6	[a]147.1	Sept. 6	[a]143.2

182422067015100. Local number 165.
LOCATION.--Lat 18°24'22", long 67°01'51".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Mateo Pérez - Bo. Saltos.
AQUIFER.--Cibao Formation, Guajataca member.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 16 in (0.40 m), cased 16 in (0.40 m) 0-40 ft (0-12.2 m), cased 12 in (0.30 m) 40-200 ft (12.20-60.98 m). Depth 200 ft (61.0 m).
DATUM: Altitude of land-surface datum is about 672 ft (205 m) above mean sea level. Measuring point: Hole on top of pump base, 1.00 ft (0.30 in) above land-surface datum.
REMARKS.--Pumping discontinued. Abandoned observation well.
PERIOD OF RECORD.--January 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 68.38 ft (20.85 m) below land-surface datum, Nov. 8, 1982; lowest water level measured, 70.60 ft (21.52 m) below land-surface datum, June 18, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	69.46	Jan. 11	69.30	Apr. 4	69.22	July 11	69.42
Nov. 3	69.35	Feb. 8	69.29	May 3	69.30	Aug. 27	69.18
Dec. 7	68.38	Mar. 5	69.27	June 6	69.13	Sept. 6	69.08

[a] Pumping.

GROUND-WATER LEVELS

RIO GRANDE DE ARECIBO BASIN

181038066441201. Local number, 86.
LOCATION.--Lat 18°10'38", long 66°44'12".
Owner: Joaquín Mactei -- U.S. Geological Survey.
Name: Adjuntas.
AQUIFER.--Alluvium of Quaternary Age and volcanic rock of Eocene Age.
WELL CHARACTERISTICS.--Drilled test well, diameter 6 in (15 cm). Depth 300 ft (91.46 m).
DATUM.--Altitude of land-surface datum is about 1,460 ft (445 m) above mean sea level. Measuring point: Bottom edge of hole in 6 in (15 cm) casing, 1.45 ft (0.44 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--August 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.34 ft (1.32 m) below land-surface datum, Jan. 12, 1979; lowest measured, 12.60 ft (3.84 m) below land-surface datum, May 2, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 26	10.10	Jan. 10	11.14	Apr. 3	12.56	July 9	12.06
Nov. 2	10.57	Feb. 6	12.37	May 2	12.60	Aug. 7	11.58
Dec. 5	11.17	Mar. 2	12.19	June 4	11.18	Sept. 6	9.61

181307066355901. Local number, 123.
LOCATION.--Lat 18°13'07", long 66°35'50".
Owner: P.R. Aqueduct & Sewer Authority.
Name: Jayuya 3.
AQUIFER.--Recent alluvium.
WELL CHARACTERISTICS.--Drilled for public supply well, diameter 10 in (25 cm), cased 0-27 ft (0-8.23 m), perforated 27-100 ft (8.23-30.48 m), gravel packed 0-100 ft (0-30.48 m). Depth 100 ft (30.88 m).
DATUM.--Altitude of land-surface datum is about 1,400 ft (427 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe on concrete pump base, 1.40 ft (0.43 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--Jan. 15, 1976 to July 21, 1977, Jan. 15, 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.73 ft (3.27 m) below land-surface datum, May 30, 1980; lowest measured, a49.36 ft (a15.04 m) below land-surface datum, Apr. 21, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 25	13.05	Jan. 10	14.39	Apr. 3	15.43	July 9	15.02
Nov. 20	13.24	Feb. 19	15.25	May 5	15.45	Aug. 6	15.38
Dec. 5	14.64	Mar. 11	15.40	June 4	14.75	Sept. 30	13.72

182632066384800. Local number, 161.
LOCATION.--Lat 18°26'32", long 66°38'48".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Santana #2
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in (0.30 m), cased 0-180 ft (0-54.88 m), diameter 10 in (0.25 m), perforated 175-220 ft (53.35-67.07 m). Depth 220 ft (67.07 m).
DATUM.--Altitude of land-surface datum is about 148 ft (45.1 m) above mean sea level. Measuring point: Airhole in pump base, 0.90 ft (0.27 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--January 8, 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a113.7 ft (34.66 m) below land-surface datum, Jan. 8, 1982; lowest water level measured, a152.2 ft (46.40 m) below land-surface datum, May 12, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	a138.4	Jan. 23	a132.8	Apr. 17	a142.9	July 18	a134.2
Nov. 23	a132.1	Feb. 21	a132.2	May 29	a132.0	Aug. 1	a129.2
Dec. 14	a133.0	Mar. 23	a133.1	June 4	125.8	Sept. 7	a132.5

a Pumping.

GROUND-WATER LEVELS

RIO GRANDE DE MANATI BASIN

182548066300201. Local number, 68.
LOCATION.--Lat 18°25'48", long 66°30'02".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Manatí 2.
AQUIFER.--Unconsolidated deposits of Quaternary Age and limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 20 to 12 in (51 to 30 cm), cased 20 in (51 cm), 8-168 ft (2.44-51.21 m); 12 in (30 cm) 153-206 ft (46.65-62.80 m); perforated 20 in (51 cm) 80-168 ft (24.39-51.21 m), 12 in (30 cm), 153-206 ft (46.65-62.80 m). Depth 212 ft (64.6 m).
DATUM.--Altitude of land-surface datum is about 31.4 ft (9.57 m) above mean sea level. Measuring point: Bottom edge of hole in 20 in (51 cm) casing, 3.55 ft (1.08 m) above land-surface datum.
REMARKS.--Observation well. Lowest and highest water levels are pumping levels.
PERIOD OF RECORD.--October 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a22.50 ft (a6.86 m) below land-surface datum, June 2, 1965; lowest measured, a37.19 ft (a11.34 m) below land-surface datum, Jan. 15, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	a29.14	Jan. 23	a29.50	Apr. 17	a29.77	July 18	a29.43
Nov. 23	a29.05	Feb. 21	a29.26	May 29	a29.19	Aug. 8	a29.27
Dec. 15	a29.24	Mar. 23	a29.39	June 11	a28.66	Sept. 10	a29.28

182603066333601. Local number, 71.
LOCATION.--Lat 18°26'03", long 66°33'36".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Florida Afuera, Barceloneta.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in (30 cm), cased 0-150 ft (0-45.73 m). Depth 235 ft (71.64 m).
DATUM.--Altitude of land-surface datum is about 213 ft (64.9 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.9 cm) pipe in pump base, 3.0 ft (0.91 m) above land surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--March 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a17.60 ft (a5.36 m) below land-surface datum, June 28, 1983; lowest measured, 226.9 ft (69.17 m) below land-surface datum, Apr. 4, 1963.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	a19.82	Jan. 23	[illegible]	Apr. 17	a18.16	July 18	a18.57
Nov. 23	a19.67	Feb. 21	[illegible]	May 29	a18.20	Aug. 8	a17.92
Dec. 14	a18.80	Mar. 23	[illegible]	June 11	a18.39	Sept. 5	a18.64

a Pumping.

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GROUND-WATER LEVELS

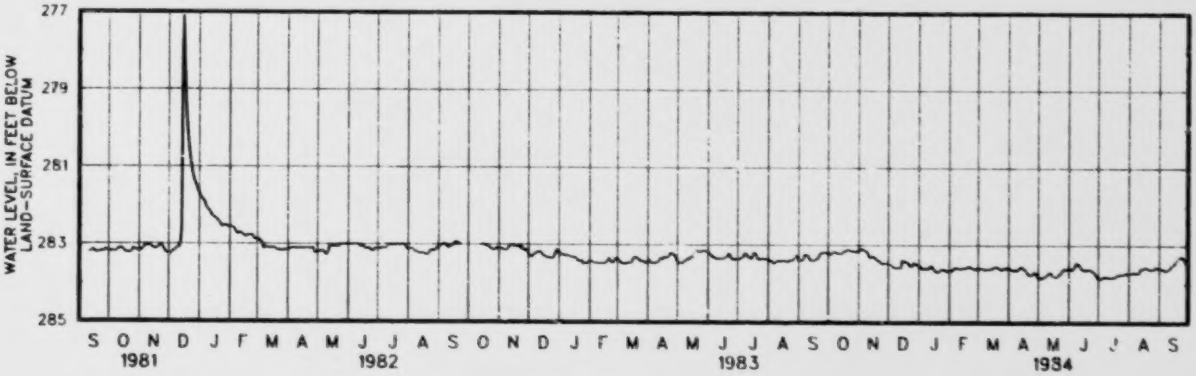
RIO GRANDE DE MANATI BASIN

182621066343301. Local number, 135.
LOCATION.--Lat 18°26'21", long 66°34'33".
Owner: Puerto Rico Land Authority.
Name: Lederle.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled agricultural water-table well, diameter 24 in (61 cm), cased 0-30 ft (0-9.1 m), diameter 16 5/8 in (42 cm), cased to 0-450 ft (0-137.2 m). Depth 550 ft (167.6 m).
DATUM.--Altitude of land-surface datum is 287 ft (87.48 m) above mean sea level. Measuring point: Top of shelter floor, 2.8 ft (0.85 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--November 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 276.85 ft (84.38 m) below land-surface datum, Dec. 16, 1981; lowest, 283.9 ft (86.55 m) below land-surface datum, May 3, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	283.22	283.12	283.46	283.52	283.67	283.59	283.59	283.82	283.62	283.84	283.71	283.59
2	283.23	283.09	283.47	283.53	283.67	283.60	283.59	283.84	283.62	283.85	283.71	283.60
3	283.24	283.09	283.49	283.57	283.65	283.60	283.61	283.85	283.61	283.85	283.71	283.59
4	283.23	283.10	283.51	283.59	283.63	283.59	283.62	283.84	283.63	283.85	283.71	283.60
5	283.19	283.12	283.54	283.61	283.63	283.60	283.64	283.83	283.60	283.83	283.71	283.60
6	283.19	283.11	283.56	283.60	283.60	283.61	283.64	283.83	283.57	283.81	283.69	283.64
7	283.17	283.12	283.57	283.59	283.58	283.61	283.64	283.81	283.55	283.80	283.70	283.65
8	283.17	283.14	283.58	283.60	283.57	283.62	283.63	283.80	283.48	283.82	283.70	283.63
9	283.17	283.17	283.58	283.61	283.58	283.62	283.64	283.78	283.45	283.81	283.70	283.63
10	283.21	283.19	283.58	283.60	283.59	283.61	283.64	283.76	283.47	283.80	283.70	283.62
11	283.20	283.27	283.58	283.58	283.60	283.61	283.61	283.74	283.49	283.82	283.70	283.60
12	283.20	283.29	283.57	283.55	283.61	283.61	283.59	283.71	283.50	283.82	283.68	283.58
13	283.21	283.31	283.57	283.53	283.60	283.60	283.57	283.70	283.57	283.83	283.61	283.53
14	283.22	283.30	283.58	283.53	283.59	283.61	283.55	283.70	283.60	283.83	283.60	283.51
15	283.20	283.28	283.40	283.58	283.58	283.60	283.56	283.76	283.62	283.83	283.59	283.49
16	283.19	283.30	283.40	283.61	283.59	283.58	283.58	283.80	283.63	283.82	283.59	283.47
17	283.15	283.31	283.41	283.64	283.58	283.56	283.62	283.81	283.64	283.81	283.57	283.45
18	283.15	283.33	283.41	283.66	283.58	283.55	283.65	283.81	283.64	283.81	283.56	283.42
19	283.14	283.36	283.42	283.68	283.55	283.55	283.68	283.80	283.62	283.79	283.56	283.38
20	283.12	283.38	283.44	283.69	283.55	283.55	283.71	283.79	283.62	283.77	283.58	283.34
21	283.11	283.39	283.45	283.68	283.55	283.56	283.75	283.79	283.62	283.76	283.60	283.32
22	283.12	283.41	283.49	283.66	283.55	283.58	283.76	283.75	283.63	283.75	283.61	283.30
23	283.13	283.44	283.54	283.66	283.57	283.60	283.77	283.74	283.62	283.74	283.61	283.28
24	283.14	283.47	283.54	283.62	283.59	283.61	283.76	283.72	283.64	283.74	283.61	283.28
25	283.15	283.48	283.53	283.62	283.60	283.62	283.74	283.67	283.66	283.74	283.61	283.30
26	283.16	283.48	283.48	283.62	283.61	283.60	283.72	283.66	283.67	283.74	283.60	283.33
27	283.15	283.47	283.46	283.63	283.62	283.59	283.69	283.62	283.70	283.74	283.60	283.39
28	283.16	283.46	283.47	283.65	283.61	283.60	283.69	283.60	283.74	283.72	283.56	283.44
29	283.16	283.46	283.49	283.66	283.60	283.59	283.73	283.60	283.78	283.72	283.56	283.48
30	283.17	283.46	283.50	283.65	---	283.58	283.79	283.62	283.82	283.72	283.56	283.50
31	283.14	---	283.50	283.67	---	283.58	---	283.63	---	283.73	283.57	---
LOW	283.24	283.48	283.58	283.69	283.67	283.62	283.79	283.85	283.82	283.85	283.71	283.65
HIGH	283.11	283.09	283.40	283.52	283.55	283.55	283.55	283.60	283.45	283.72	283.56	283.28

WTR YR 1984 MEAN 282.78 LOW 283.85 HIGH 283.09



RIO GRANDE DE MANATI BASIN

182454066315300. Local number, 142.
LOCATION.--Lat 18°24'54", long 66°31'53".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Morán Simó.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m) 0-147 ft (0-44.82 m), cased 20 in (0.51 m) 0-100 ft (0-30.49 m), diameter 16 in (0.41 m) 147-211 ft (44.82-64.33 m), diameter 12 in (0.30 m) 211-320 ft (64.33-97.56 m), cased 12 in (0.30 m) 0-320 ft (0-97.6 m), perforated 248-320 ft (75.6-97.6 m), diameter 10 in (0.25 m) 320-517 ft (97.6-158 m), cased 8 in (0.20 m) 300-517 ft (91.46-158 m), perforated 480-517 ft (146-158 m). Depth 517 ft (158 m).
DATUM.--Altitude of land-surface datum is 492 ft (150 m) above mean sea level. Measuring point: top of 1.75 in (0.04 m) hole on top of 3 in (0.08 m) casing, 1.0 ft (0.30 m) above land surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--August 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 226.5 ft (69.05 m) below land-surface datum, May 21, 1982; lowest water level measured, 229.9 ft (70.09 m) below land-surface datum, May 29, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	228.5	Jan. 23	228.9	Apr. 17	229.3	July 18	229.0
Nov. 23	226.6	Feb. 21	228.8	May 29	229.9	Aug. 8	229.0
Dec. 15	229.0	Mar. 23	229.1	June 11	229.9	Sept. 5	229.1

182542066305100. Local number, 166.
LOCATION.--Lat 18°25'42", long 66°30'51".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Manatí (New well).
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), cased 0-100 ft (0-39.49 m), diameter 14 in (0.36 m), cased 0-140 ft (0-42.68 m), slotted 80-90 ft (24.39-27.44 m) and 130-140 ft (39.63-42.68 m). Depth 140 ft (42.68 m).
DATUM.--Altitude of land-surface datum is 29.52 ft (9.0 m) above mean-sea level. Measuring point: Top of 14 in (0.36 m) casing, 0.80 ft (0.24 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--January 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.90 ft (6.98 m) below land-surface datum, Mar. 3, 1983; lowest water level measured, 26.36 ft (8.04 m) below land-surface datum, Feb. 3, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	25.34	Jan. 23	26.05	Apr. 17	25.55	July 18	25.98
Nov. 23	25.17	Feb. 21	25.55	May 29	25.41	Aug. 8	25.96
Dec. 15	25.43	Mar. 23	25.78	June 11	25.53	Sept. 10	25.85

GROUND-WATER LEVELS

RIO CIBUCO BASIN

182446066194801. Local number, 62.
LOCATION.--Lat 18°24'46", long 66°19'48".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Vega Alta ..
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 16 to 12 in (41 to 30 cm), cased 16 in (41 cm) 0-50 ft (0-15.2 m), 12 in (30 cm) 0-110 ft (0-33.54 m). Depth 210 ft (64.02 m).
DATUM.--Altitude of land-surface datum is about 102 ft (31.10 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe in pump base, 1.0 ft (0.30 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--January 1961 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a75.88ft (a23.13 m) below land-surface datum, Feb. 21, 1984; lowest measured, 137.9 ft (42.04 m) below land-surface datum, Mar. 3, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	a98.58	Jan. 23	a97.00	Apr. 17	a95.52	July 18	a106.4
Nov. 23	a112.6	Feb. 21	a75.88	May 29	a102.4	Aug. 8	a108.3
Dec. 15	a110.5	Mar. 23	a82.10	June 12	a100.1	Sept. 5	a108.0

a Pumping.

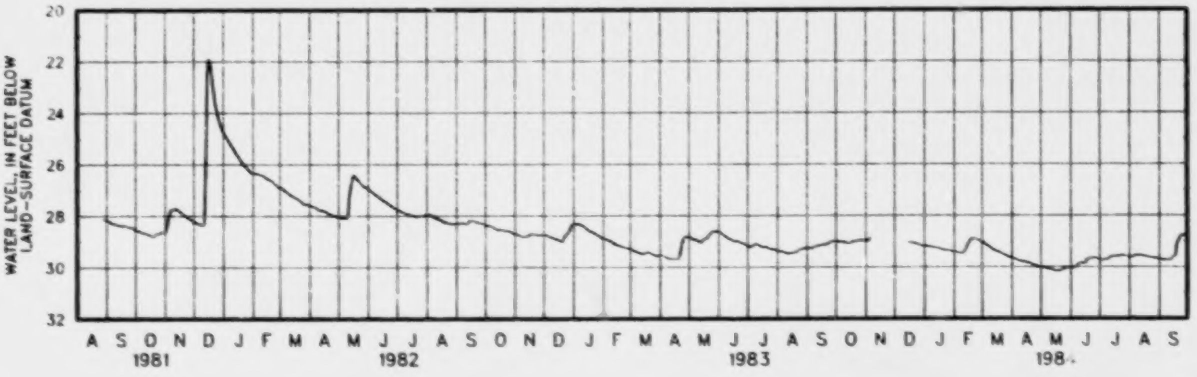
GROUND-WATER LEVELS

RIO CIBUCO BASIN

182647066201701. Local number, 70.
LOCATION.--Lat 18°26'47", long 66°20'17".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Sabana Hoyos.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in (20 cm), cased 0-90 ft (0-27.43 m), perforated. Depth 90 ft (27.43 m).
DATUM.--Altitude of land-surface datum is about 49 ft (14.9 m) above mean sea level. Measuring point: Top of casing wooden cover, 1.30 ft (0.40 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--February 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.33 ft (6.50 m) below land-surface datum, Oct. 26, 1976; lowest, 31.10 ft (9.48 m) below land-surface datum, July 31, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.99	28.96	---	29.15	29.41	29.03	29.65	30.03	30.03	29.71	29.60	29.68
2	29.00	28.95	---	29.18	29.42	29.05	29.66	30.01	30.02	29.73	29.60	29.70
3	29.01	28.96	---	29.18	29.41	29.08	29.67	30.02	30.02	29.74	29.60	29.71
4	29.01	28.96	---	29.18	29.43	29.11	29.69	30.03	30.03	29.73	29.61	29.72
5	29.01	28.97	---	29.19	29.43	29.13	29.70	30.03	30.03	29.73	29.58	29.74
6	29.03	---	---	29.19	29.44	29.16	29.71	30.03	29.99	29.71	29.56	29.73
7	29.01	---	---	29.20	29.45	29.17	29.74	30.03	29.95	29.71	29.55	29.73
8	29.02	---	---	29.21	29.44	29.19	29.76	30.07	29.92	29.70	29.55	29.72
9	29.03	---	---	29.22	29.45	29.22	29.77	30.06	29.91	29.70	29.54	29.72
10	29.03	---	---	29.23	29.45	29.25	29.77	30.07	29.88	29.70	29.55	29.72
11	29.04	---	---	29.24	29.41	29.27	29.73	30.09	29.86	29.65	29.55	29.72
12	29.05	---	---	29.24	29.36	29.31	29.77	30.10	29.85	29.62	29.55	29.71
13	29.06	---	---	29.24	29.31	29.33	29.79	30.11	29.84	29.61	29.55	29.70
14	29.07	---	---	29.25	29.19	29.35	29.80	30.13	29.84	29.60	29.56	29.67
15	29.07	---	29.04	29.26	29.12	29.37	29.81	30.13	29.84	29.59	29.56	29.64
16	29.06	---	29.05	29.27	29.06	29.38	29.82	30.14	29.85	29.58	29.58	29.60
17	29.05	---	29.05	29.29	29.01	29.39	29.83	30.15	29.74	29.58	29.59	29.57
18	29.02	---	29.05	29.30	28.95	29.41	29.83	30.14	29.72	29.58	29.59	29.28
19	29.01	---	29.06	29.31	28.91	29.42	29.85	30.14	29.69	29.59	29.59	29.14
20	28.99	---	29.05	29.32	28.89	29.45	29.86	30.13	29.67	29.58	29.60	29.04
21	28.99	---	29.07	29.33	28.90	29.46	29.87	30.13	29.65	29.58	29.62	28.96
22	28.99	---	29.08	29.33	28.89	29.48	29.90	30.11	29.66	29.56	29.62	28.89
23	28.93	---	29.09	29.33	28.90	29.50	29.91	30.11	29.65	29.55	29.63	28.83
24	28.97	---	29.10	29.34	28.91	29.52	29.93	30.09	29.65	29.55	29.63	28.79
25	28.97	---	29.12	29.34	28.94	29.54	29.93	30.07	29.64	29.55	29.64	28.76
26	28.95	---	29.13	29.35	28.95	29.55	29.94	30.06	29.64	29.55	29.65	28.76
27	28.95	---	29.14	29.36	28.97	29.58	29.96	30.05	29.64	29.56	29.66	28.77
28	28.96	---	29.15	29.36	28.99	29.60	29.98	30.04	29.65	29.57	29.66	28.79
29	28.97	---	29.16	29.37	29.01	29.61	30.00	30.03	29.67	29.57	29.66	28.81
30	28.98	---	29.17	29.39	---	29.62	30.02	30.02	29.69	29.57	29.65	28.82
31	28.97	---	29.18	29.40	---	29.64	---	30.01	---	29.59	29.66	---
LOW	29.07	---	---	29.40	29.45	29.64	30.02	30.15	30.03	29.74	29.66	29.74
HIGH	28.93	---	---	29.18	28.89	29.03	29.65	30.01	29.64	29.55	29.54	28.76



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GROUND-WATER LEVELS

RIO CIBUCO BASIN

182705066213500. Local number, 151.
LOCATION.--Lat 18°27'05", long 66°21'35".
Owner: AFDA - P.R. Department of Agriculture.
Name: Rice Program #3.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled agricultural water-table well, diameter 18 in (0.46 m) cased 0-80 ft (0-24.39 m), diameter 16 in (0.41 m), open hole 80-160 ft (24.39-48.78 m). Depth 160 ft (48.78).
DATUM.--Altitude of land-surface datum is about 19.7 ft (6 m) above mean sea level; Measuring point: Hole 1 in (0.02 m) side of casing, 2.40 ft (0.73 m) above land-surface datum.
REMARKS.--Observation well. Irrigation water supply.
PERIOD OF RECORD.--January 13, 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.72 ft (1.13 m) below land-surface datum, Jan. 13, 1982; lowest water level, measured, a41.78 ft (a12.74 m) below land-surface datum, Aug. 17, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 20	6.30	Jan. 23	6.80	June 12	7.03	Aug. 3	6.38
Nov. 18	6.32	Feb. 24	6.68	July 9	6.96	Sept. 5	6.62
Dec. 15	6.48	May 4	7.39				

182612066225400. Local number, 155.
LOCATION.--Lat 18°26'54", long 66°22'54".
Owner: P.R. Aqueduct and Sewer Authority.
Name: La Trocha.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS:--Drilled unused water-table well, diameter 20 in (0.51 m), cased 0-70 ft (0-21.34 m), diameter 16 in (0.41 m), cased 0-100 ft (0-30.49), perforated 100-200 ft (30.49-60.97 m). Depth 200 ft (61.0 m).
DATUM.--Altitude of land-surface datum is about 49.20 ft (15.0 m) above mean sea level. Measuring Point: Top of 20 in (0.51 m) casing, 2.10 ft (0.64 m) above land-surface datum.
REMARKS.--Observation well. Never used as water supply well due to high concentrations of chlorides.
PERIOD OF RECORD.--January 14, 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 32.23 ft (9.83 m) below land-surface datum, Jan. 14, 1982; lowest water level, 34.62 ft (10.55 m) below land-surface datum, May 29, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	34.10	Jan. 23	34.40	Apr. 17	34.60	July 18	34.51
Nov. 23	34.02	May 21	33.26	May 12	33.95	Aug. 15	34.32
Mar. 17	34.38	June 16	33.48	June 27	34.08	Sept. 6	34.60

182652066241400. Local number, 156.
LOCATION.--Lat 18°26'52", long 66°24'14".
Owner: P.R. Aqueduct and Sewer Authority.
Name: El Criollo #1.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 20 in (0.51 m), cased 0-98 ft (0-29.88 m), diameter 16 in (0.41 m), perforated 88-120 ft (26.83-36.58 m). Depth 120 ft (36.58 m).
DATUM.--Altitude of land-surface datum is about 49.20 ft (15 m) above mean sea level. Measuring point: Upper edge of 2 in (0.05 m) pipe on pump base, 1.80 ft (0.55 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--January 14, 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 40.52 ft (12.35 m) below land-surface datum, Feb. 16, 1982; lowest water level a47.30 ft (a14.42 m) below land-surface datum, Apr. 5, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	a42.95	Jan. 23	a41.89	Apr. 17	a42.89	July 18	a43.95
Nov. 23	a43.95	Feb. 21	a43.67	May 29	a43.00	Aug. 8	a43.75
Dec. 15	a43.94	Mar. 23	a44.02	June 11	a43.88	Sept. 5	a43.65

a Pumping.

GROUND-WATER LEVELS

RIO CIBUCO BASIN

182654066211600. Local number, 167.
LOCATION.--Lat 18°26'54", long 66°21'16".
Owner: P. R. Land Authority, AFDA.
Name: U.S.G.S. Observation Well #3.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-228 ft (0-69.51 m), open hole 228-238 ft (69.51-72.56 m). Depth 238 ft (72.56 m).
DATUM.--Altitude of land-surface datum is 65.6 ft (20.0 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 3.10 ft (0.94 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by nearby pumpage.
PERIOD OF RECORD.--January 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.07 ft (3.98 m) below land-surface datum, Jan. 13, 1982; lowest water level measured, c16.90 ft (5.15 m) below land-surface datum, Aug. 18, 1983.

WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 14	15.13	Jan. 23	14.42	June 12	15.52	Aug. 3	15.54
Nov. 10	14.95	Feb. 24	15.19	July 9	15.60	Sept. 5	15.96
Dec. 15	15.14	May 4	15.92				

182751066221600. Local number, 168.
LOCATION.--Lat 18°27'51", long 66°22'16".
Owner: AFDA. P.R. Department of Agriculture.
Name: Rice Program #4.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled agricultural water-table well, diameter 16 in (0.41 m), cased 16 in (0.41 m) 0-156 ft (0-32.3 m), slotted 56-106 ft (17.07-32.31 m), open hole 106-150 ft (32.31-45.73 m). Depth 150 ft (45.73 m).
DATUM.--Altitude of land-surface datum is about 9.84 ft (3 m) above mean sea level. Measuring point: Top of 16 in (0.41 m) casing, 0.80 ft (0.24 m) above land-surface datum.
REMARKS.--Observation well. Irrigation water supply well.
PERIOD OF RECORD.--March 17, 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.88 ft (1.49 m) below land-surface datum, Mar. 17, 1982; lowest water level measured, a53.85 ft (16.42 m) below land-surface datum, July 26, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 14	a49.90	Jan. 23	5.90	June 12	5.77	Aug. 3	a42.65
Nov. 17	a46.77	Feb. 24	a43.22	July 9	5.76	Sept. 5	a24.17
Dec. 15	a43.90	May 4	6.15				

182740066223100. Local number, 169.
LOCATION.--Lat 18°27'40", long 66°22'31".
Owner: AFDA. P.R. Department of Agriculture.
Name: Rice Program #5.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled agricultural water-table well, diameter 16 in (0.41 m), cased 16 in (0.41 m) 0-80 ft (0-24.39 m), open hole 80-140 ft (24.39-42.68 m). Depth 140 ft (42.68 m).
Datum.--Altitude of land-surface datum is about 13.10 ft (4.0 m) above mean sea level. Measuring point: Top of 16 in (0.41 m) casing, 0.10 ft (0.03 m) above land-surface datum.
REMARKS.--Observation well. Irrigation water supply well.
PERIOD OF RECORD.--March 17, 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.15 ft (1.88 m) below land-surface datum, Mar. 17, 1982; lowest water level measured, a15.60 ft (4.76 m) below land-surface datum, July 26, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 14	6.33	Jan. 23	a12.10	June 12	6.35	Aug. 3	7.37
Nov. 17	a11.37	Feb. 24	a10.87	July 9	7.44	Sept. 5	7.62
Dec. 15	a11.10	May 4	a12.05				

a Pumping.
c Pumping nearby well

GROUND-WATER LEVELS

RIO DE LA PLATA BASIN

180707066084201. Local number, 33.
LOCATION.--Lat 18°07'07", long 66°08'42".
Owner: P.R. Aqueduct and Sewer Authority.
Name. Cayey 10.
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 16 to 12 in (41 to 30 cm), cased 16 in (41 cm) 0-30 ft (0-9.14 m), 12 in (30 cm) 0-200 ft (0-60.97 m), perforated 30-200 ft (9.14-60.97 m), gravel packed 0-190 ft (0-57.92 m). Depth 220 ft (67.07 m).
DATUM.--Altitude of land-surface datum is about 1,280 ft (390 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe in pump base, 1.20 ft (0.37 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.49 ft (0.45 m) below land-surface datum, Jan. 18, 1961; lowest measured, a169.2 ft (a51.58 m) below land-surface datum, Dec. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	WATER level	Date	Water level
Oct. 13	a100.4	Jan. 24	a85.49	Apr. 10	a58.50	July 16	a79.50
Nov. 18	a 90.30	Feb. 24	a75.90	May 22	a67.97	Aug. 7	a70.75
Dec. 12	a102.1	Mar. 30	a112.0	June 19	a75.65	Sept. 11	a86.26

180853066095401. Local number, 37.
LOCATION.--Lat 18°08'53", long 66°09'54".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Barrio Rincón de Cidra.
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled water supply water-table well, diameter 16 to 8 in (41 to 20 cm), cased 16 in (41 cm) 0-30 ft (0-9.15 m), 12 in (30 cm) 0-43 ft (0-13.10 m), perforated 0-43 ft (0-13.10 m). Depth 200 ft (60.97 m).
DATUM.--Altitude of land-surface datum is about 1,180 ft (359.7 m) above mean sea level. Measuring point: Lower edge at 0.75 in (1.90 cm) pipe, 1.90 ft (0.58 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--June 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.38 ft (4.38 m) below land-surface datum, July 20, 1979; lowest measured, 62.87 ft (19.16 m) below land-surface datum, Jul. 5, 1961.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 13	22.25	Jan. 24	23.94	Apr. 11	25.34	July 16	24.00
Nov. 18	22.26	Feb. 24	23.27	May 22	25.47	Aug. 7	24.40
Dec. 12	23.00	Mar. 30	25.02	June 19	24.50	Sept. 11	24.98

180823066154601. Local number, 38.
LOCATION.--Lat 18°08'23", long 66°15'46".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Barrio Robles.
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 10 in (25 cm). Depth 82 ft (25.0 m).
DATUM.--Altitude of land-surface datum is about 1,980 ft (603 m) above mean sea level. Measuring point: Top of clean-out door sill, 1.80 ft (0.55 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1959 to current year; changed to a partial site on Sept. 2, 1981.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.60 ft (1.10 m) above land-surface datum, Sept. 6, 1960; lowest, 51.47 ft (15.69 m) below land-surface datum, Sept. 30, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 13	10.14	Jan. 24	10.30	Apr. 10	12.40	July 16	10.57
Nov. 18	9.12	Feb. 24	10.75	May 22	12.60	Aug. 7	11.12
Dec. 12	9.72	Mar. 30	11.82	June 19	11.12	Sept. 11	11.33

a Pumping.

RIO DE LA PLATA BASIN

182518066144201. Local number, 67.
LOCATION.--Lat 18°25'18", long 66°14'42".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Campanilla.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in (30 cm). Depth 300 ft (91.46 m).
DATUM.--Altitude of land-surface datum is about 390 ft (119 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe, 1.00 ft (0.30 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--March 1959 to December 19, 1983 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 27.91 ft (8.51 m) below land-surface datum, Dec. 16, 1981; lowest measured, 49.90 ft (15.21 m) below land-surface datum, June 6, 1967.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level
Oct. 31	34.31	Dec. 19	34.12

182636066164201. Local number, 69.
LOCATION.--Lat 18°26'36", long 66°16'42".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Higuillar.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 10 in (25 cm). Depth 200 ft (60.97 m).
DATUM.--Altitude of land-surface datum is about 60 ft (18.3 m) above mean sea level. Measuring point: Airline hole in pump base, 1.10 ft (0.34 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--July 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 41.21 ft (12.56 m) below land-surface datum, July 3, 1958; lowest measured, 58.89 ft (17.95 m) below land-surface datum, Oct. 26, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	a54.07	Jan. 31	a49.70	Apr. 17	a51.26	July 18	a54.26
Nov. 8	a53.98	Feb. 21	a53.30	May 29	a45.15	Aug. 8	a53.56
Dec. 15	a54.17	Mar. 23	a52.70	June 12	a51.26	Sept. 5	a54.15

182623066181400. Local number, 150.
LOCATION.--Lat 18°26'23", long 66°18'14".
Owner: Department of Agriculture, Land Authority; loaned to Puerto Rico Aqueduct and Sewer Authority.
Name: Monterey Forestal.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in. (0.30 m), cased 12 in. (0.30 m) 0-300 ft (0-91.46 m), open hole 300-400 ft (91.46-122 m). Depth 400 ft (122 m).
DATUM.--Altitude of land-surface datum is 131.2 ft (40 m) above mean sea level. Measuring point: Bottom edge of 1 in. (2.54 cm) pipe on top of pump concrete base, 1.00 ft (0.30 m) above land-surface datum.
REMARKS.--Irrigation supply observation well.
PERIOD OF RECORD.--January 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a183.8 ft (56.04 m) below land-surface datum, Nov. 8, 1983; lowest water level measured, a210.9 ft (64.29 m) below land-surface datum, Apr. 15, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	a184.2	Jan. 31	184.6	Apr. 17	a193.3	July 18	184.7
Nov. 8	a183.8	Feb. 21	184.0	May 29	185.6	Aug. 8	195.4
Dec. 15	184.2	Mar. 23	184.6	June 12	185.1	Sept. 5	196.5

a Pumping.

GROUND-WATER LEVELS

RIO HONDO TO RIO PUERTO NUEVO BASINS

181047066091701. Local number, 42.
LOCATION.--Lat 18°10'47", long 66°09'17".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Cidra 2.
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 13 in (33 cm), cased 0-64 ft (0-19.51 m), perforated 16-64 ft (4.88-19.51 m). Depth 92 ft (28.05 m).
DATUM.--Altitude of land-surface datum is about 1,340 ft (408 m) above mean sea level. Measuring point: Airline hole in pump base, 1.40 ft (0.43 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.30 ft (3.75 m) below land-surface datum, Dec. 27, 1979; lowest measured 56.32 ft (17.17 m) below land-surface datum, Apr. 1, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 13	17.00	Jan. 24	20.34	Apr. 11	25.95	July 16	19.99
Nov. 18	17.93	Feb. 24	21.00	May 22	26.01	Aug. 7	19.15
Dec. 12	19.71	Mar. 30	24.52	June 19	26.13	Sept. 11	21.93

182506066030801. Local number, 65.
LOCATION.--Lat 18°25'06", long 66°03'08".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Hato Rey Central, McCracken well.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 15 in (38 cm), cased 0-205 ft (0-62.50 m), perforated 64-205 ft (19.51-62.50 m). Depth 205 ft (62.50 m).
DATUM.--Altitude of land-surface datum is about 33 ft (10.1 m) above mean sea level. Measuring point: Top of casing 3.40 ft (1.04 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--July 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.40 ft (6.83 m) below land-surface datum, Aug. 12, 1976; lowest measured, 42.40 ft (12.92 m), below land-surface datum, May 13, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 11	31.24	Feb. 17	30.33	Apr. 11	30.75	July 18	31.46
Nov. 17	31.05	Mar. 19	30.66	May 31	31.25	Aug. 8	31.48
Dec. 19	30.35	23	30.80	June 5	31.46	Sept. 11	31.3[illegible]
Jan. 13	30.43						

182547066110801. Local number, 66.
LOCATION.--18°25'47", long 66°11'08".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Sabana Seca.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well. Depth 130 ft (39.63 m).
DATUM.--Altitude of land-surface datum is about 75 ft (22.87 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe in pump base, 1.20 ft (0.37 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--June 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a39.23 ft (a11.96 m) below land-surface datum, Dec. 17, 1981; lowest measured, 57.75 ft (17.60 m), below land-surface datum, Aug. 13, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	a43.63	Feb. 21	a44.02	May 29	45.36	Aug. 8	44.87
Dec. 15	a44.30	Mar. 23	a44.55	June 12	45.14	Sept. 6	44.92
Jan. 31	a46.87	Apr. 17	44.96	July 18	44.77		

a Pumping.

GROUND-WATER LEVELS

RIO GRANDE DE LOIZA BASIN

181550065593201. Local number, 50.
LOCATION.--Lat 18°15'50", long 65°59'32".
Owner: Gurabo Agricultural Experimental Station.
Name: Gurabo.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 13 in (33 cm). Depth 145 ft (44.21 m).
DATUM.--Altitude of land-surface datum is about 148 ft (45.12 m) above mean sea level. Measuring point: Top of 12 in (30 cm) casing, 0.80 ft (0.24 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--December 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.65 ft (3.86 m) below land-surface datum, Sept. 9, 1975; lowest measured, 44.38 ft (13.53 m) below land-surface datum, June 18, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 13	29.83	Jan. 12	29.44	Apr. 10	31.34	July 30	26.96
Nov. 22	28.99	Feb. 16	28.86	May 23	34.33	Aug. 13	30.20
Dec. 19	29.55	Mar. 8	29.17	June 14	30.15	Sept. 17	30.45

181538066021301. Local number, 52.
LOCATION.--Lat 18°15'38", long 66°02'13".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Bairoa.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 to 10 in (41 to 25 cm) 0-69 ft (0-21.04 m), 79-100 ft (24.08-30.49 m), 110-116 ft (33.54-35.37 m), perforated 79-100 ft (24.08-30.49 m), screened 69-79 ft (21.04-24.08 m) and 100-110 ft (30.49-33.54 m); gravel packed to 113 ft (34.45 m). Depth 116 ft (35.37 m).
DATUM.--Altitude of land-surface datum is about 200 ft (60.98 m) above mean sea level. Measuring point: Airline hole in pump base, 1.4 ft (0.43 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--July 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.92 ft (+0.28 m) below land-surface datum, Nov. 15, 1979; lowest measured, a115.1 ft (a35.09 m) below land-surface datum, June 18, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 13	a73.51	Jan. 13	a74.08	Apr. 10	a80.08	July 30	a73.12
Nov. 11	a73.76	Feb. 17	a75.53	May 29	a78.85	Aug. 13	a76.22
Dec. 12	a73.16	Mar. 8	a79.85	June 14	a73.01	Sept. 13	26.23

+ Above land-surface datum.
a Pumping.

GROUND-WATER LEVELS

RIO HERRERA TO RIO ANTON RUIZ BASINS

181217065453000. Local number, 171.
LOCATION.--Lat 18°12'17", long 65°45'30".
Owner: Carlos Arroyo and Roberto Ramirez.
Name: Arroyo well #1.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Test well drilled by the USGS, diameter 4 to 2 in (10.16-5.08 cm), cased 4 in (10.16 cm) 0-29 ft (0-8.84 m), 2 in (5.08 cm) 29-32 (8.84-9.76 m), 2 in (5.08 cm) slotted PVC screen 29-32 ft (8.84-9.76 m). Depth 32 ft (9.76 m).
DATUM.--Altitude of land-surface datum is about 19.10 ft (5.82 m) above mean sea level. Measuring point: Mark on shelf of gage house, 6.00 ft (1.83 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--June 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.72 ft (0.83 m) below land-surface datum, Nov. 6, 1983; lowest measured, 10.87 ft (3.31 m) below land-surface datum, May 17, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.59	8.76	8.97	---	8.93	8.91	9.93	10.52	9.75	8.59	9.14	8.62
2	8.51	8.77	5.20	---	9.03	8.90	9.95	10.62	9.90	8.72	7.84	8.61
3	8.96	8.30	8.22	---	9.07	9.02	9.98	10.66	10.09	8.61	8.44	8.72
4	8.76	5.63	8.40	---	8.92	9.07	10.01	10.68	10.20	8.36	8.59	8.77
5	9.01	5.57	8.50	---	8.72	9.11	10.03	10.71	10.30	7.44	8.56	8.85
6	9.27	3.37	7.77	9.08	8.87	9.14	10.06	10.75	9.15	8.26	8.70	8.57
7	9.03	5.47	8.27	9.09	8.54	9.22	10.07	10.77	6.99	8.56	8.85	8.72
8	9.07	7.13	8.41	9.13	8.59	9.24	10.10	10.79	7.81	8.73	8.93	8.83
9	8.14	7.48	8.56	9.14	8.85	9.25	10.15	10.82	8.21	8.90	9.05	8.86
10	8.76	7.73	8.67	9.23	7.73	9.26	10.17	10.85	7.89	8.95	9.12	8.36
11	8.38	7.35	8.64	9.29	7.31	9.35	10.19	10.82	7.49	9.02	9.25	8.91
12	8.96	8.02	8.57	9.37	8.23	9.39	10.15	10.85	8.23	9.07	9.31	7.91
13	8.72	8.12	8.74	9.46	8.05	9.47	10.22	10.86	7.97	9.18	9.34	8.25
14	8.93	8.20	8.84	9.49	8.06	9.26	10.24	10.79	8.74	9.21	9.42	6.63
15	8.93	8.29	8.85	9.57	7.45	9.35	10.30	10.81	8.56	9.11	9.46	7.96
16	8.75	8.40	---	9.60	6.79	9.45	10.33	10.86	8.71	9.25	9.47	8.39
17	8.96	8.45	---	9.55	7.63	9.28	10.37	10.84	8.53	9.37	9.49	6.73
18	8.74	8.53	---	9.56	7.93	9.34	10.39	10.79	8.79	9.26	9.56	5.73
19	8.16	8.66	---	9.30	8.13	9.49	10.41	10.71	8.82	9.43	9.64	7.06
20	8.05	8.50	---	9.32	8.30	9.55	10.43	10.60	8.49	9.49	9.65	4.66
21	8.29	8.60	---	9.48	8.39	9.62	10.45	10.69	8.70	9.53	9.70	5.14
22	8.43	8.58	---	9.59	8.51	9.64	10.45	10.77	8.91	9.43	9.65	7.07
23	8.52	8.74	---	9.22	8.55	9.66	10.50	10.69	9.07	9.34	9.68	7.46
24	8.63	8.76	---	9.56	8.67	9.65	10.54	10.50	9.11	9.50	9.75	7.81
25	8.75	8.49	---	9.18	8.70	9.70	10.56	10.72	9.19	9.52	9.84	7.97
26	8.70	8.94	---	9.51	8.75	9.75	10.58	9.92	9.32	9.53	9.33	8.11
27	8.85	8.92	---	6.05	8.90	9.73	10.59	10.03	9.35	9.56	7.40	8.27
28	8.90	8.96	---	8.77	8.97	9.80	10.03	9.15	9.45	9.64	7.95	8.16
29	8.96	8.99	---	8.34	8.93	9.81	10.33	8.94	9.34	9.65	8.35	8.36
30	8.70	8.97	---	8.39	---	9.86	10.43	7.91	9.44	8.79	8.52	8.45
31	8.00	---	---	8.93	---	9.90	---	9.16	---	9.08	8.63	---
LOW	9.03	8.99	---	---	9.07	9.90	10.59	10.86	10.30	9.64	9.84	8.91
HIGH	8.00	3.37	---	---	6.79	8.90	9.93	7.91	6.99	7.44	7.40	4.66

GROUND-WATER LEVELS

RIO HERRERA TO RIO ANTON RUIZ BASINS

180908065475000. Local number, 173.
LOCATION.--Lat 18°09'08", long 65°47'50".
Owner: Squibb Manufacturing, Inc.
Name: Squibb observation well #3.
AQUIFER.--Alluvium.
WELLS CHARACTERISTICS.--Drilled unused water-table industrial well, diameter 10 in (0.25 m), cased 10 in (0.25 cm), perforated 60-110 ft (18.29-33.54 m). Depth 110 ft (33.54 m)
DATUM.--Altitude of land-surface datum is about 21.00 ft (6.40 m) above mean sea level. Measuring point: Mark on shelf of gage house, 3.00 ft (0.91 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--July 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.73 ft (1.14 m) below land-surface datum, Sept. 29, 1984; lowest measured, 10.44 ft (3.18 m) below land-surface datum, May 19-20, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.89	6.67	7.84	5.78	4.70	3.28	9.81	10.07	9.53	7.79	---	6.86
2	6.93	6.56	7.77	5.76	4.44	3.35	9.85	10.11	9.48	7.82	---	6.86
3	7.01	6.54	7.70	5.53	4.35	3.44	9.87	10.13	9.45	7.85	---	6.86
4	7.00	6.53	7.65	5.59	4.26	3.51	9.89	10.15	9.44	7.91	---	6.82
5	7.02	6.46	7.65	5.55	3.37	3.60	9.95	10.17	9.44	7.78	---	6.84
6	7.05	6.44	7.65	5.70	2.63	3.67	9.98	10.18	9.06	7.69	---	6.74
7	7.07	6.52	7.65	5.32	2.29	3.77	10.07	10.19	8.86	7.67	---	6.67
8	7.07	6.50	7.45	5.47	2.64	3.35	10.16	10.19	8.76	7.71	---	6.51
9	7.07	6.51	7.25	5.96	3.63	3.39	10.24	10.20	8.75	7.74	---	6.56
10	7.07	6.58	7.21	5.90	3.92	3.99	10.21	10.23	8.69	7.72	---	6.49
11	7.07	6.79	7.13	5.90	4.72	9.06	10.14	10.25	8.54	7.78	---	6.34
12	7.06	6.86	7.08	5.94	5.39	9.10	10.13	10.26	8.41	7.77	---	6.43
13	7.05	6.96	7.32	5.97	5.79	9.15	10.14	10.22	8.29	7.76	---	6.07
14	7.03	7.01	7.55	5.96	6.21	9.18	10.16	10.24	8.21	7.79	---	5.78
15	7.02	7.09	7.71	5.98	6.47	9.24	10.17	10.25	8.19	7.81	---	5.78
16	6.99	7.11	7.81	5.98	6.64	9.30	10.19	10.27	8.19	7.85	---	5.79
17	6.87	7.12	7.80	5.93	6.84	9.34	10.20	10.33	8.21	7.93	---	5.29
18	6.85	7.18	7.47	5.91	6.92	9.36	10.23	10.33	8.12	7.97	---	5.26
19	6.84	7.23	7.53	5.96	7.07	9.22	10.26	10.39	7.95	8.02	---	4.89
20	6.84	7.27	7.12	5.83	7.18	9.28	10.23	10.42	7.85	8.03	---	4.57
21	6.85	7.33	6.84	5.56	7.33	9.40	10.29	10.27	7.82	8.07	---	4.31
22	6.85	7.38	6.66	5.39	7.43	9.45	10.24	10.13	7.80	7.85	---	4.19
23	6.86	7.45	6.56	5.17	7.64	9.48	10.19	10.11	7.81	7.75	---	4.08
24	6.86	7.53	6.39	5.04	7.74	9.52	10.16	10.10	7.83	---	---	4.00
25	6.84	7.60	6.29	5.00	7.89	9.55	10.11	10.06	7.79	---	---	3.90
26	6.82	7.65	6.20	4.82	8.03	9.58	10.08	10.05	7.45	---	---	3.85
27	6.82	7.68	6.11	4.74	8.08	9.62	10.09	10.06	7.47	---	---	3.82
28	6.76	7.71	6.04	4.67	8.16	9.65	10.10	10.06	7.61	---	7.05	3.76
29	6.76	7.78	5.97	4.62	8.23	9.68	10.12	10.04	7.72	---	7.00	3.74
30	6.75	7.82	5.88	4.38	---	9.72	10.14	9.85	7.74	---	6.94	3.76
31	6.67	---	5.82	4.39	---	9.78	---	9.67	---	---	6.87	---
LOW	7.07	7.82	7.84	5.98	8.23	9.78	10.29	10.42	9.53	---	---	6.86
HIGH	6.67	6.44	5.82	4.38	2.29	3.28	9.81	9.67	7.45	---	---	3.74

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GROUND-WATER LEVELS

RIO HUMACAO TO RIO SECO BASINS

175735066095901. Local number, 2.
LOCATION.--Lat 17°57'35", long 66°09'59".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Puente Jobos.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 21 in (53 cm). Depth 148 ft (45.12 m).
DATUM.--Altitude of land-surface datum is about 26 ft (7.93 m) above mean sea level. Measuring point: Bottom edge of 0.88 in (2.24 cm) pipe, 1.70 ft (0.52 m) above land-surface datum.
REMARKS.--Observation well. Lowest water level is a pumping level.
PERIOD OF RECORD.--February 1961 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.85 ft (0.87 m) below land-surface datum, July 24, 1979; lowest measured, 61.78 ft (18.83 m) below land-surface datum, Aug. 6, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	7.25	Jan. 13	7.04	Apr. 6	6.91	July 9	6.51
Nov. 22	6.94	Feb. 17	6.49	May 5	7.20	Aug. 6	7.15
Dec. 9	7.20	Mar. 23	6.75	June 12	5.87	Sept. 26	6.10

175734066100401. Local number, 3.
LOCATION.--Lat 17°57'34", long 66°10'04".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Jobos.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Bored unused artesian well, diameter 4 in (10 cm). Depth 16 ft (4.88 m).
DATUM.--Altitude of land-surface datum is about 25 ft (7.62 m) above mean sea level. Measuring point: Top of 5 in (13 cm) fitting, 0.50 ft (0.15 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--November 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.01 ft (0.30 m) below land-surface datum, Jan. 3, 1963; lowest measured, dry at 16 ft (4.88 m) below land-surface datum, many days during 1968 and 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	2.90	Jan. 13	2.59	Apr. 6	2.55	July 9	2.08
Nov. 22	2.53	Feb. 17	1.81	May 3	2.94	Aug. 6	2.86
Dec. 9	2.85	Mar. 23	2.21	June 12	0.83	Sept. 26	1.62

GROUND-WATER LEVELS

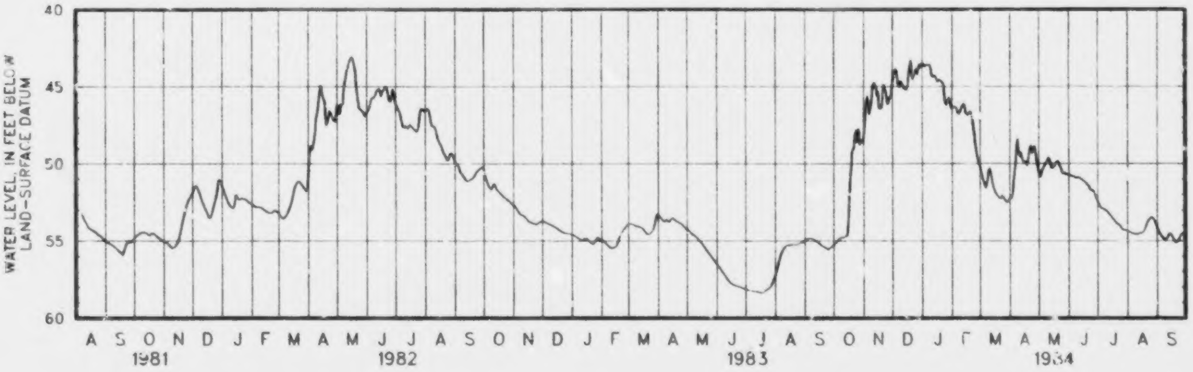
RIO HUMACAO TO RIO SECO BASINS

175858066100201. Local number, 6.
LOCATION.--Lat 17°58'58", long 66°10'02".
Owner: Doctor Bruno.
Name: Juana 5.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (41 cm). Depth 173 ft (52.74 m) reported, 110 ft (33.54 m) measured.
DATUM.--Altitude of land-surface datum is about 127 ft (38.72 m) above mean sea level. Measuring point: Top of shelter floor, 3.00 ft (0.91 m) above land-surface datum. After Aug. 7, 1981, top of 16" casing, 1.55 ft (0.47 m) above land-surface datum.
REMARKS.--Recorder installed Jan. 25, 1962.
PERIOD OF RECORD.--November 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.20 ft (7.99 m) below land-surface datum, Dec. 10, 1979; lowest measured, 65.95 ft (20.10 m) below land-surface datum, June 2, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55.25	48.26	44.74	43.49	46.41	50.24	52.23	50.67	50.67	52.41	54.33	54.15
2	55.17	47.55	44.29	43.49	46.35	50.50	52.21	50.71	50.70	52.57	54.35	54.31
3	55.11	46.84	44.17	43.53	46.32	50.75	52.21	50.91	50.75	52.71	54.39	54.45
4	55.04	45.85	43.87	43.58	46.31	50.97	51.97	50.58	50.91	52.52	54.43	54.55
5	54.97	45.70	43.94	43.60	46.36	51.18	51.14	50.33	50.81	52.48	54.47	54.64
6	54.90	46.12	44.42	43.53	46.46	51.40	50.55	50.23	50.80	52.90	54.50	54.73
7	54.85	46.78	44.82	43.62	46.69	51.56	49.92	50.13	50.85	52.92	54.52	54.81
8	54.81	47.48	44.97	43.60	46.77	51.33	48.80	49.97	50.93	52.95	54.53	54.87
9	54.79	46.05	44.72	43.59	46.66	50.74	48.40	49.92	50.90	52.99	54.54	54.90
10	54.77	45.27	44.67	43.86	46.52	50.43	49.12	49.74	50.90	53.06	54.55	54.89
11	54.76	44.86	44.63	44.28	46.33	50.33	49.55	49.61	50.89	53.10	54.55	54.82
12	54.74	44.78	44.93	44.36	46.25	50.58	49.23	49.70	50.91	53.18	54.55	54.72
13	54.70	44.99	45.11	44.33	46.12	50.91	49.28	49.79	50.93	53.25	54.52	54.59
14	54.69	45.14	45.06	44.30	46.17	51.26	49.70	50.25	50.98	53.33	54.47	54.51
15	54.65	45.57	45.19	44.36	46.67	51.51	49.85	50.26	51.04	53.41	54.44	54.53
16	53.70	45.32	45.18	44.53	46.75	51.71	49.90	50.24	51.09	53.48	54.49	54.63
17	52.16	46.41	44.68	44.57	46.82	51.85	49.85	50.16	51.13	53.57	54.45	54.76
18	50.98	46.41	44.04	44.61	46.77	51.96	50.00	50.02	51.17	53.65	54.37	54.89
19	50.23	46.41	43.68	44.54	46.71	52.04	50.08	49.90	51.23	53.72	54.27	54.97
20	49.23	46.37	43.81	44.60	46.63	52.12	49.82	49.96	51.33	53.80	54.10	55.05
21	49.07	45.33	44.31	44.59	46.77	52.20	49.37	49.93	51.38	53.86	53.91	55.08
22	48.95	44.83	44.51	44.73	47.01	52.25	48.93	50.02	51.47	53.90	53.77	55.06
23	48.16	45.11	44.30	44.33	47.51	52.28	48.54	50.18	51.52	53.95	53.66	54.93
24	47.93	45.23	44.14	45.47	48.05	52.39	49.31	50.32	51.69	54.05	53.59	54.80
25	48.55	45.67	43.90	45.06	48.60	52.16	49.24	50.55	51.71	54.07	53.52	54.68
26	48.03	46.13	43.85	45.17	49.09	52.26	48.93	50.63	51.73	54.16	53.48	54.59
27	47.79	46.06	44.11	45.96	49.48	52.34	48.89	50.55	51.80	54.25	53.49	54.53
28	48.76	45.70	43.84	45.95	49.82	52.43	49.34	50.56	51.94	54.29	53.54	54.52
29	48.51	45.73	43.59	45.76	50.01	52.49	49.81	50.68	52.10	54.28	53.66	54.50
30	48.58	45.40	43.72	45.97	---	52.45	50.17	50.63	52.25	54.30	53.81	54.49
31	48.60	---	43.56	46.35	---	52.37	---	50.69	---	54.30	53.93	---
LOW	55.25	48.26	45.19	46.35	50.01	52.49	52.23	50.71	52.25	54.30	54.55	55.08
HIGH	47.79	44.78	43.56	43.49	46.12	50.24	48.40	49.61	50.67	52.41	53.48	54.15

WTR YR 1984 MEAN 49.68 LOW 55.25 HIGH 43.48



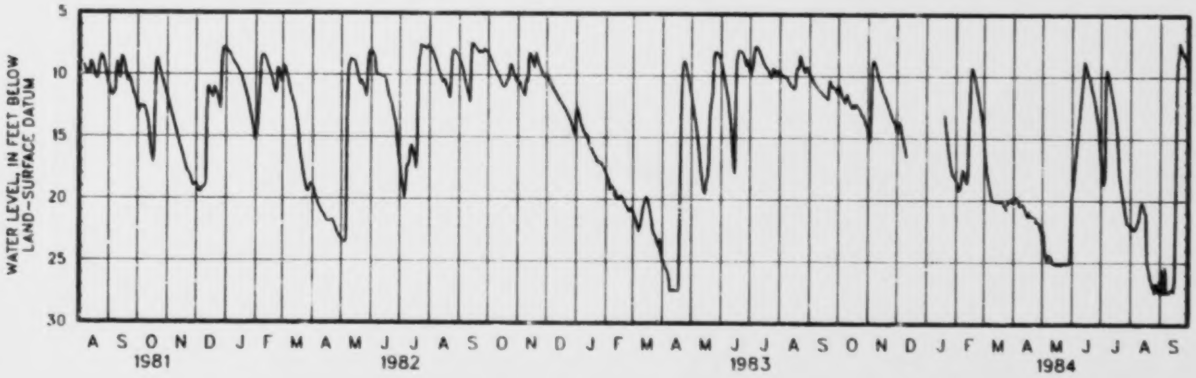
GROUND-WATER LEVELS

RIO HUMACAO TO RIO SECO BASINS

175944066033601. Local number, 15.
LOCATION.--Lat 17°59'44", long 66°03'36".
   Owner: P.R. Aqueduct and Sewer Authority.
   Name: Pitahaya 1.
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in (30 cm). Depth 181 ft (55.18 m).
DATUM.--Altitude of land-surface datum is about 130 ft (39.63 m) above mean sea level. Measuring point: Bottom of inspection door, 1.10 ft (0.34 m) above land-surface datum.
REMARKS.--Recording observation well. Water levels affected by pumping of nearby well.
PERIOD OF RECORD.--September 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.00 ft (0.91 m) below land-surface datum, Oct. 7, 1970; lowest, 43.90 ft (13.38 m) below land-surface datum, May 20, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.75	14.56	14.46	---	18.31	15.26	20.24	23.46	19.27	16.99	22.12	27.45
2	10.79	15.04	14.56	---	18.65	16.19	20.08	22.45	19.07	15.55	22.01	25.54
3	11.06	15.21	13.63	---	18.75	17.20	19.73	23.67	18.15	13.04	22.17	27.16
4	11.35	13.35	13.71	---	19.12	17.58	19.81	24.36	17.21	10.69	22.31	27.45
5	11.60	9.38	14.01	---	19.04	18.24	19.83	24.73	16.29	10.11	22.37	27.45
6	11.30	8.83	14.55	---	18.58	18.77	20.14	24.38	15.45	10.37	22.24	25.35
7	11.97	8.72	15.01	---	18.03	19.19	20.46	24.44	14.62	9.46	22.17	27.44
8	12.15	8.96	15.33	---	17.55	19.56	20.47	24.40	13.80	9.61	21.81	27.44
9	11.95	9.24	15.63	---	17.75	19.74	20.32	24.31	12.97	10.07	21.61	27.44
10	11.44	9.55	16.09	---	18.00	20.02	20.27	24.50	12.13	10.53	21.33	27.44
11	11.61	9.87	16.52	---	18.45	20.04	20.33	24.92	11.30	10.47	20.79	27.24
12	11.93	10.16	---	---	18.62	20.06	20.66	25.06	10.45	11.26	20.24	27.29
13	12.17	10.44	---	---	18.20	20.07	20.73	25.00	9.65	11.63	20.22	27.19
14	12.36	10.70	---	---	13.83	20.05	21.07	25.11	8.82	12.10	20.30	27.00
15	12.56	10.97	---	---	12.57	20.09	21.14	25.18	9.03	12.60	20.61	27.22
16	12.29	11.22	---	---	10.45	20.10	21.34	25.14	9.35	13.11	20.97	25.01
17	12.30	11.42	---	---	9.32	20.11	20.99	25.18	9.69	13.61	21.06	20.72
18	12.55	11.55	---	---	9.36	20.13	21.18	25.15	9.96	14.42	24.86	10.57
19	12.43	11.75	---	---	9.65	20.16	21.27	25.18	10.12	15.39	25.42	8.15
20	12.24	11.97	---	15.09	10.06	20.15	21.23	25.18	10.47	17.55	25.60	8.39
21	12.45	12.19	---	16.08	10.42	20.15	21.61	25.18	10.85	18.32	26.35	7.25
22	12.51	12.39	---	16.70	10.96	20.43	21.59	25.17	11.19	18.93	26.40	7.63
23	12.62	12.62	---	15.39	11.25	20.53	21.37	25.05	11.47	19.38	26.73	7.88
24	12.83	12.88	---	15.35	11.65	20.72	21.61	25.12	11.86	19.80	26.97	8.06
25	13.07	13.13	---	15.74	12.10	20.48	21.81	25.18	12.29	20.31	26.95	8.19
26	13.23	13.31	---	17.24	12.53	20.12	21.76	25.18	12.82	20.28	27.45	8.32
27	13.15	13.49	---	17.57	12.97	20.02	21.80	25.18	13.40	21.37	26.70	8.48
28	13.41	13.67	---	17.96	13.49	20.11	22.17	25.13	13.80	21.55	27.13	8.65
29	13.73	13.85	---	18.05	13.97	19.96	22.35	25.17	14.36	21.93	27.22	8.92
30	13.94	14.10	---	18.02	---	19.83	22.09	24.58	15.64	21.83	27.31	8.92
31	14.09	---	---	18.32	---	20.20	---	20.76	---	21.97	26.53	---
LOW	14.09	15.21	---	---	19.12	20.72	22.35	25.18	19.27	21.97	27.45	27.45
HIGH	10.75	8.72	---	---	9.32	15.26	19.73	20.76	8.82	9.46	20.22	7.25



GROUND-WATER LEVELS

RIO HUMACAO TO RIO SECO BASINS

180338065523301. Local number, 31.
LOCATION.--Lat 18°03'38", long 65°52'33".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Central Roig.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 20 in (51 cm), 0-120 ft (0-36.58 cm), 12 in (30 cm) 120-125 ft (36.58-38.11 m), cased 0-125 ft (0-38.11 m), perforated 40-125 ft (12.20-38.11 m). Depth 125 ft (38.11 m).
DATUM.--Altitude of land-surface datum is about 41 ft (12.50 m) above mean sea level. Measuring point: Airline hole in pump base, 4.00 ft (1.22 m) above land-surface datum.
REMARKS.--Observation well. Drilled 5 ft (1.52 m) into rock. Affected by nearby pumping.
PERIOD OF RECORD.--July 1959 to August 1973; April 1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.86 ft (1.79 m) below land-surface datum, Sept. 20, 1960; lowest measured, a50.57 ft (a15.41 m) below land-surface datum, July 7, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	a34.98	Jan. 17	a34.81	Apr. 12	a36.97	July 18	a27.10
Nov. 22	a33.77	Feb. 15	a34.91	May 21	a35.93	Aug. 16	a40.25
Dec. 13	a33.91	Mar. 12	a38.54	June 14	a32.84	Sept. 26	a40.60

175641066085101. Local number, 89.
LOCATION.--Lat 17°56'41", long 66°08'51".
Owner: Phillips Puerto Rico Core, Inc.
Name: Phillips observation well 3.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled test well, diameter 4 in (10 cm). Depth 114 ft (34.75 m).
DATUM.--Altitude of land-surface datum is about 6 ft (1.8 m) above mean sea level. Measuring point: Top of casing, 2.25 ft (0.69 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--October 1968 to current year; changed to a partial site on Oct. 1, 1981.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, +2.70 ft (+0.82 m) above land-surface datum, Jan. 9, 1973; lowest, 4.32 ft (1.32 m) below land-surface datum, June 5, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	0.98	Jan. 13	0.79	Apr. 6	1.22	July 9	+0.41
Nov. 22	0.50	Feb. 17	0.95	May 3	1.45	Aug. 6	1.60
Dec. 9	0.82	Mar. 23	1.34	June 14	1.13	Sept. 26	0.64

+ Above land-surface datum.
a Pumping.

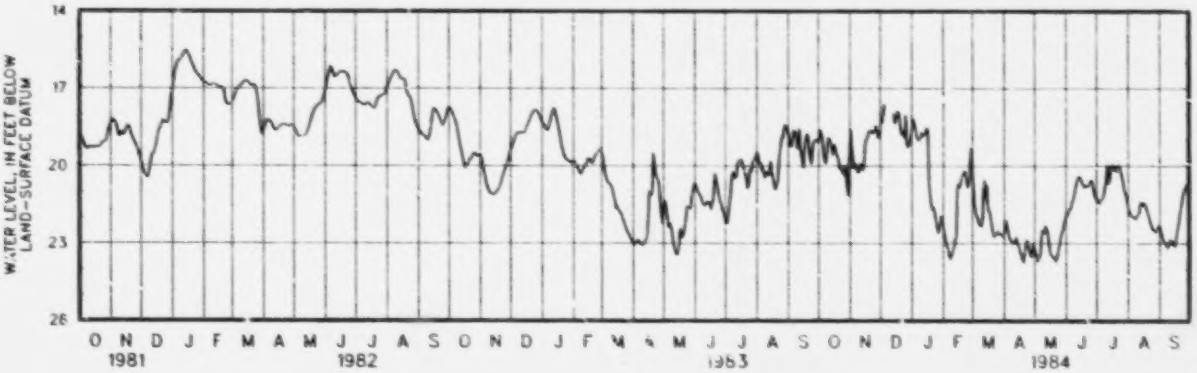
GROUND-WATER LEVELS

RIO HUMACAO TO RIO SECO BASINS

180416065514101. Local number, 96.
LOCATION.--Lat 18°04'16", long 65°51'41".
Owner: P.R. Aqueduct and Sewer Authority.
Name: USGS TW-2 or Yabucoa 7.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 16 in (41 cm) cased 0-10 ft (0-3.05 m), diameter 6 in (15 cm), cased about 0-183 ft (0-55.79 m), perforated 56-81 ft (17.07-24.70 m), 102-123 ft (31.10-37.50 m), 144-181 ft (43.90-55.18 m). Depth 181 ft (55.18 m).
DATUM.--Altitude of land-surface datum is about 25 ft (7.62 m) above mean sea level. Measuring point: Top of shelter floor, 4.00 ft (1.22 m) above land-surface.
REMARKS.--Observation recording well.
PERIOD OF RECORD.--April 25, 1978 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.52 ft (4.73 m) below land-surface datum, Jan. 15, 1982; lowest, 28.29 ft (8.62 m) below land-surface datum, Sept. 20, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.07	19.53	18.61	18.62	22.36	20.17	22.60	23.19	21.96	21.27	21.57	22.31
2	18.80	18.51	18.12	18.41	22.51	20.96	22.47	23.35	21.92	21.28	21.73	22.44
3	18.61	19.27	18.31	18.25	22.77	21.44	22.11	23.49	21.87	21.17	21.82	22.63
4	18.79	19.75	17.95	18.44	23.02	21.40	22.37	23.56	21.73	21.45	21.93	22.92
5	18.93	20.08	17.67	18.55	23.13	21.35	22.56	23.39	21.65	21.31	21.94	22.95
6	19.58	19.98	---	18.38	23.23	21.95	22.79	23.35	21.65	21.29	21.95	22.92
7	19.80	19.94	---	18.94	23.47	22.20	22.85	23.34	21.40	21.27	21.99	22.96
8	19.89	20.10	---	18.99	23.59	22.28	22.89	22.79	21.33	21.16	22.04	23.09
9	19.70	20.24	---	18.93	23.45	22.22	22.93	22.50	21.20	20.84	22.01	23.16
10	19.04	20.22	---	18.85	23.36	22.30	22.97	22.60	20.95	20.70	21.93	23.06
11	18.92	19.99	---	18.73	23.25	21.95	22.95	22.57	20.74	20.20	21.87	22.92
12	18.96	19.91	---	18.91	23.05	20.55	22.86	22.33	20.62	19.99	21.80	22.86
13	19.05	20.38	---	18.93	22.82	20.56	22.79	22.42	20.50	20.56	21.53	22.96
14	19.29	20.15	17.98	18.79	22.77	21.25	22.91	22.55	20.43	20.55	21.41	22.99
15	19.57	19.89	18.34	18.56	20.94	20.75	23.09	22.91	20.42	20.15	21.52	23.05
16	19.29	19.20	18.29	18.35	20.71	21.50	23.19	23.26	20.51	19.99	21.53	23.09
17	19.17	18.99	18.12	18.60	20.92	21.79	23.37	23.41	20.66	19.95	21.42	22.91
18	19.33	18.94	17.93	20.74	20.72	21.77	23.46	23.65	20.72	20.03	21.49	22.64
19	19.63	18.80	17.94	21.09	20.53	22.05	23.61	23.50	20.81	20.16	21.64	22.43
20	19.57	18.58	18.17	21.46	20.39	22.33	23.69	23.56	20.74	20.39	21.77	22.20
21	19.79	18.66	18.63	21.57	20.32	22.56	23.43	23.60	20.77	20.18	21.90	21.96
22	20.09	18.63	18.79	21.59	20.23	22.73	23.17	23.67	20.79	20.05	22.06	21.69
23	20.10	18.73	18.66	21.62	20.21	22.68	22.91	23.33	20.75	19.95	22.21	21.46
24	20.01	18.71	18.79	21.95	20.59	22.66	22.83	23.39	20.73	20.05	22.34	21.18
25	20.22	18.64	18.91	22.15	20.81	22.62	23.12	23.15	20.63	20.26	22.44	20.99
26	20.33	18.62	19.05	22.37	20.73	22.53	23.31	22.96	20.56	20.35	22.45	20.90
27	20.33	18.45	19.13	22.59	20.50	22.56	23.44	22.76	20.59	20.37	22.48	20.83
28	20.02	18.57	19.26	22.49	19.53	22.64	23.52	22.58	20.83	20.34	22.56	20.73
29	20.72	18.90	19.22	22.18	19.30	22.63	23.15	22.48	21.10	21.06	22.50	20.58
30	21.13	18.82	19.07	21.95	---	22.67	23.02	22.25	21.23	21.11	22.41	20.79
31	20.25	---	18.87	22.36	---	22.73	---	22.11	---	21.29	22.33	---
LOW	21.13	20.24	---	22.59	23.59	22.73	23.69	23.67	21.96	21.45	22.56	23.16
HIGH	18.61	18.45	---	18.25	19.30	20.17	22.11	22.11	20.42	19.95	21.41	20.69



180026065544301. Local number, 122.
LOCATION.--Lat 18°00'26", long 65°54'43".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Maunabo Calzada.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled exploration well, diameter 4 in (10 cm). Depth 70 ft (21.3 m).
DATUM.--Altitude of land-surface datum is about 28.5 ft (8.7 m) above mean sea level. Measuring point: Top of shelter floor, 1.4 ft (0.43 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--December 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.24 ft (0.68 m) below land-surface datum, July 8, 1976; lowest measured, 12.38 ft (3.77 m) below-land surface datum, Aug. 12, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	c 8.90	Jan. 17	c 9.14	Apr. 12	c10.60	July 18	c10.45
Nov. 22	c 8.78	Feb. 15	c10.10	May 21	c11.33	Aug. 16	c10.79
Dec. 13	c 9.42	Mar. 12	c10.00	June 14	c 8.13	Sept. 26	7.83

180010066004501. Local number, 125.
LOCATION.--Lat 18°00'10", long 66°00'45".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Patillas STP.
AQUIFER --Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 in (41 cm), cased 0-45 ft (0-13.7 m); cased 12 in (30 cm) 0-49 ft (0-14.9 m); perforated 49-81 ft (14.9 -24.7 m). Depth 90 ft (27.4 m).
DATUM.--Altitude of land-surface datum is about 48 ft (14.6 m) above mean sea level. Measuring point: Bottom edge of 0.75 in (1.90 cm) pipe in concrete pump base 1.0 ft (0.30 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumping nearby well.
PERIOD OF RECORD.--January 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.83 ft (3.91 m) below land-surface datum, June 17, 1981; lowest measured, a52.98 ft (a16.15 m) below land-surface datum, May 24, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	a48.83	Jan. 20	a48.90	Apr. 11	a48.16	July 10	a51.33
Nov. 22	a48.87	Feb. 15	a48.76	May 14	a52.10	Aug. 6	a48.72
Dec. 5	a50.10	Mar. 21	a48.90	June 14	a50.63	Sept. 17	20.58

a Pumping.
c Pumping nearby well

GROUND-WATER LEVELS

RIO HUMACAO TO RIO SECO BASIN

180849065502400. Local number, 172.

LOCATION.--Lat 18°08'49", long 65°50'24".
Owner: U.S. Geological Survey, City of Humacao.
Name: Río Humacao Ground-Water Station.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Test well drilled by USGS, diameter 4 to 2 in (10.16-5.08 cm), cased 4 in (10.16 cm) 0-40 ft (0-12.20 m), 2 in (5.08 cm) 40-43 ft (12.20-13.11 m), 2 in (5.08 slotted PVC screen 40-43 ft (12.20-13.11 m), 2 in (5.08) slotted PVC screen 40-43 ft (12.20-13.11 m). Depth 43 ft (13.11 m).

DATUM.--Altitude of land-surface datum is about 57.40 ft (17.50 m) above mean sea level. Measuring point: Mark on shelf of gage house, 3.30 ft (1.01 m) above land surface datum.

REMARKS.--Recording observation well.

PERIOD OF RECORD.--November 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.73 ft (4.80 m) below land-surface datum, Sept. 14, 1984; lowest measured 18.22 ft (5.55 m) below land-surface datum, May 9-11, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	17.71	17.61	17.79	17.78	18.05	18.18	17.42	17.17	17.17	17.15
2		---	17.53	17.56	17.80	17.77	18.06	18.19	17.53	17.13	16.95	17.21
3		---	17.40	17.70	17.81	17.78	18.07	18.20	17.60	17.21	17.12	17.24
4		---	17.45	17.71	17.81	17.80	18.09	18.15	17.62	17.24	16.77	17.18
5		---	17.52	17.71	17.82	17.80	18.07	18.15	17.70	16.93	16.99	17.23
6		---	17.51	17.71	17.82	17.82	18.06	18.18	17.05	17.10	17.10	16.92
7		---	17.51	17.71	17.86	17.83	17.99	18.18	16.73	17.17	17.14	17.05
8		---	17.55	17.73	17.77	17.84	18.04	18.19	16.94	17.22	17.21	17.11
9		---	17.63	17.74	17.79	17.84	18.06	18.19	17.03	17.25	17.22	17.18
10		---	17.64	17.56	17.90	17.84	18.06	18.22	16.73	17.17	17.26	17.08
11		17.22	17.65	17.65	17.79	17.85	18.07	18.21	16.67	17.22	17.28	17.13
12		17.27	17.66	17.69	17.76	17.87	18.03	18.13	16.90	17.26	17.31	17.08
13		17.32	17.69	17.71	17.65	17.88	18.10	18.11	16.66	17.29	17.34	16.79
14		17.36	17.70	17.62	17.49	17.89	18.09	18.10	16.82	17.29	17.35	15.97
15		17.40	17.69	17.63	17.52	17.89	18.12	18.11	16.92	17.25	17.37	16.55
16		17.41	17.70	17.56	17.02	17.91	18.13	18.15	17.01	17.28	17.32	15.69
17		17.44	17.72	17.59	17.15	17.94	18.13	18.15	17.05	17.34	17.39	16.37
18		17.47	17.71	17.69	17.30	17.93	18.15	18.18	17.00	17.35	17.40	16.31
19		17.50	17.70	17.70	17.41	17.94	18.17	18.20	16.71	17.36	17.42	16.30
20		17.52	17.73	17.56	17.49	17.96	18.07	18.12	16.86	17.30	17.42	16.17
21		17.56	17.75	17.62	17.54	17.99	18.08	18.11	16.95	17.34	17.44	16.09
22		17.57	17.75	17.65	17.60	18.00	18.03	18.02	16.99	17.20	17.44	16.28
23		17.59	17.75	17.67	17.64	17.98	18.09	17.88	17.04	17.16	17.45	16.42
24		17.62	17.76	17.71	17.67	17.97	18.12	17.96	17.05	17.21	17.45	16.55
25		17.64	17.75	17.67	17.69	17.99	18.12	17.72	17.11	17.26	17.49	16.58
26		17.66	17.75	17.67	17.72	18.00	18.15	17.62	17.14	17.30	17.49	16.65
27		17.67	17.76	17.71	17.74	18.01	18.16	17.87	17.13	17.32	16.79	16.70
28		17.67	17.74	17.72	17.74	18.01	18.09	17.77	17.17	17.37	16.98	16.74
29		17.69	17.74	17.73	17.77	18.01	18.14	17.79	17.15	17.21	17.08	16.81
30		17.70	17.72	17.75	---	18.02	18.17	17.22	17.15	16.95	17.12	16.85
31		---	17.67	17.77	---	18.03	---	17.30	---	17.09	17.13	---
LOW		---	17.76	17.77	17.96	18.03	18.17	18.22	17.70	17.37	17.49	17.24
HIGH		---	17.40	17.61	17.02	17.77	17.99	17.22	16.66	16.93	16.77	15.97

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS

175658066155401. Local number, 1.
LOCATION.--Lat 17°56'58", long 66°15'34".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Mar Negro.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Bored unused artesian well, diameter 3 in (8 cm). Depth 23 ft (7.0 m).
DATUM.--Altitude of land-surface datum is about 3 ft (0.91 m) above mean sea level. Measuring point: Top of 1.5 in (3.8 cm) pipe fitting, 3.2 ft (0.98 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--September 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +1.83 ft (+0.56 m) above land-surface datum, Dec. 2, 1970; lowest measured, 3.60 ft (1.10 m) below land-surface datum, July 7, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	+0.20	Jan. 13	+0.31	Apr. 6	0.69	July 19	+0.05
Nov. 22	+0.11	Feb. 17	+0.36	May 3	1.05	Aug. 6	0.31
Dec. 9	+0.12	Mar. 23	0.30	June 12	0.03	Sept. 27	+0.78

175851066174601. Local number, 8.
LOCATION.--Lat 17°58'51", long 66°17'46".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Salinas 1.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 in (41 cm) to 13 in (33 cm); cased 16 in (41 cm) 0-32 ft (0-9.8 m), 13 in (33 cm) 25-120 ft (7.6-36.6 m); perforated 25-120 ft (7.6-36.6 m). Depth 125 ft (38.1 m).
DATUM.--Altitude of land-surface datum is about 29 ft (8.8 m) above mean sea level. Measuring point. Top of 1.0 in (2.54 cm) pipe in pump base, 1.2 ft (0.37 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.95 ft (3.64 m) below land-surface datum, Dec. 14, 1960; lowest measured, 42.95 ft (13.09 m) below land-surface datum, Dec. 9, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	a28.15	Jan. 13	a26.26	Apr. 6	a27.07	July 9	a32.73
Nov. 4	a21.60	Feb. 17	a36.78	May 3	a36.55	Aug. 6	a27.52
Dec. 8	a25.85	Mar. 23	a27.10	June 12	a22.65	Sept. 28	a27.28

+ Above land-surface datum.
a Pumping.

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS

180044066153401. Local number, 18.
LOCATION.--Lat 18°00'44", long 66°15'34".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Cocos.
AQUIFER.--Alluvium of Quaternary Age and undifferentiated rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 to 12 in (41 to 30 cm), cased 16 in (41 cm) 0-40 ft (0-12.2 m), 12 in (30 cm) 0-53 ft (0-16.2 m), perforated 32-53 (9.8-16.2 m). Depth 125 ft (38.1 m).
DATUM.--Altitude of land-surface datum is about 140 ft (42.7 m) above mean sea level. Measuring point: Top of 1.0 in (2.54 cm) pipe in pump base, 1.25 ft (0.38 cm) above land-surface datum.
REMARKS.--Observation well. Water level affected by nearby pumpage.
PERIOD OF RECORD.--September 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.67 ft (4.47 m) below land-surface datum, Sept. 20, 1960; lowest measured, 79.17 ft (24.13 m) below land-surface datum, June 19, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	24.61	Jan. 13	28.40	Apr. 6	32.45	July 9	35.88
Nov. 4	25.75	Feb. 17	32.37	May 3	33.90	Aug. 6	36.58
Dec. 8	24.07	Mar. 23	31.52	June 5	35.24	Sept. 25	27.14

180023066175301. Local number, 19.
LOCATION.--Lat 18°00'23", long 66°17'53".
Owner: U.S. Army.
Name: Theater 1.
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 to 11 in (41 to 28 cm), cased 16 in (41 cm) 0-64 ft (0-19.5 m), 11 in 0-80 ft (0-24.4 m), perforated 16-64 ft (4.9-19.5 m). Depth 150 ft (45.7 m) reported, 86 ft (26.2 m) measured.
DATUM.--Altitude of land-surface datum is about 140 ft (42.7 m) above mean sea level. Measuring point: Top of 1.0 in (2.54 cm) casing liner, 0.85 ft (0.26 m) above land-surface datum. After Apr. 8, 1983, top of 4.0 in (10.1 cm) flat cap on new concrete slab, 3.6 ft (1.10 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--December 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.38 ft (12.00 m) below land-surface datum, Oct. 15, 1979; lowest, measured, 79.15 ft (24.12 m) below land-surface datum, Oct. 10, 1973.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	50.24	Jan. 13	45.16	Apr. 6	47.70	July 9	52.83
Nov. 4	50.20	Feb. 17	46.73	May 3	55.57	Aug. 6	53.90
Dec. 8	47.62	Mar. 23	47.72	June 6	51.52	Sept. 25	52.11

GROUND-WATER LEVELS

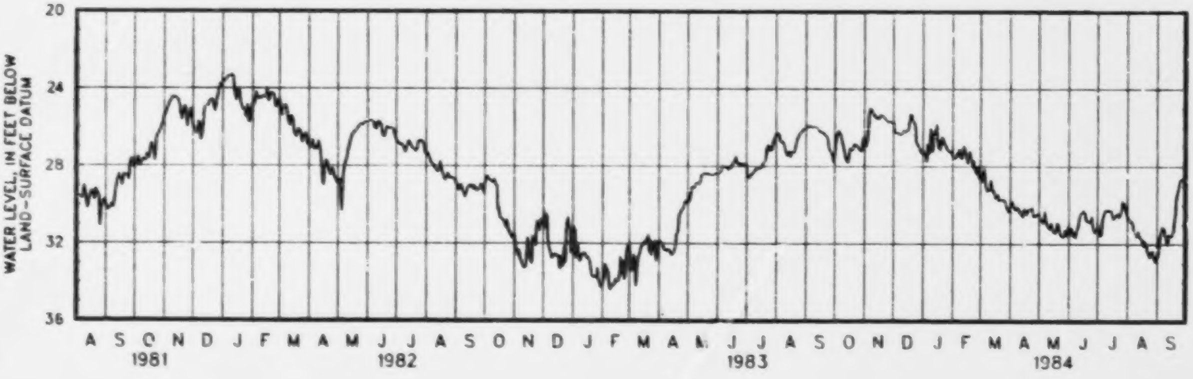
RIO SALINAS TO RIO JACAGUAS BASINS

175829066232201. Local number, 87.
LOCATION.--Lat 17°58'29", long 66°23'22".
Owner: Francisco Alomar.
Name: Alomar 1.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), iron cased. Depth 112 ft (34.14 m).
DATUM.--Altitude of land-surface datum is about 35.32 ft (10.77 m) above mean sea level. Measuring point: Bottom of clean-out shelter door, 2.50 ft (0.76 m) above land-surface datum. Prior to August 1981, top of recorder shelter floor, 4.00 ft (1.22 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--April 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.45 ft (2.58 m) below land-surface datum, Dec. 10, 1970; lowest 49.18 ft (14.99 m) below land-surface datum, July 27, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.44	26.53	25.47	27.29	27.44	28.52	30.08	30.53	31.57	31.18	30.65	32.66
2	26.92	25.92	26.14	27.26	27.49	28.69	29.80	30.76	31.31	31.13	30.68	32.62
3	26.49	25.94	26.21	27.28	27.53	28.73	29.83	30.79	31.19	31.43	30.76	32.35
4	26.33	25.65	26.26	27.39	27.55	28.31	29.79	30.77	31.21	31.55	30.81	31.65
5	26.16	25.38	26.25	27.73	27.47	28.19	30.12	30.89	31.47	31.43	30.82	31.40
6	26.24	25.34	26.29	26.37	27.30	28.75	30.19	30.65	31.57	30.90	30.86	31.13
7	26.36	25.02	26.31	26.97	27.39	29.05	30.23	30.43	31.45	30.57	31.19	31.15
8	26.47	25.02	26.35	27.28	27.10	29.25	30.03	30.79	31.59	30.41	31.37	31.16
9	26.81	25.13	26.31	26.07	27.44	29.15	30.02	30.97	31.35	30.30	31.50	31.54
10	26.90	25.25	26.33	26.36	27.55	29.19	30.26	31.04	31.17	30.25	31.55	31.62
11	27.27	25.30	26.27	27.21	27.55	29.20	30.33	31.13	31.10	30.23	31.53	31.99
12	27.51	25.42	26.16	26.29	27.06	28.73	30.46	31.21	30.64	30.27	31.33	32.32
13	27.46	25.48	26.19	26.15	26.99	29.18	30.35	31.00	30.51	30.26	31.44	31.52
14	27.75	25.41	26.22	26.23	27.10	29.26	30.56	30.95	30.41	30.27	31.63	31.60
15	27.77	25.50	26.23	25.96	27.54	29.26	30.31	31.22	30.33	30.27	31.74	31.58
16	27.30	25.53	26.14	26.56	27.63	29.46	30.20	31.35	30.32	30.45	31.74	31.55
17	27.07	25.49	26.05	26.97	27.78	29.53	30.38	31.40	30.29	30.70	32.00	31.47
18	27.38	25.33	25.74	26.76	27.37	29.51	30.45	31.43	30.43	30.66	32.07	31.34
19	27.13	25.36	25.41	27.16	27.27	29.44	30.25	31.26	30.73	30.58	31.85	30.91
20	27.09	25.39	25.31	26.77	27.61	29.72	30.26	30.92	30.79	30.50	31.96	30.38
21	26.91	25.62	25.57	26.69	27.64	29.69	30.23	30.95	30.84	30.49	32.14	29.63
22	26.84	25.68	25.67	26.55	28.00	29.73	30.22	31.28	30.84	30.43	32.42	29.42
23	26.93	25.56	25.72	26.77	27.74	29.76	30.15	31.44	30.87	30.59	32.51	29.19
24	26.83	25.58	25.89	26.96	28.13	29.70	30.14	31.53	30.93	30.50	32.66	28.94
25	26.95	25.66	26.72	26.97	28.23	29.73	30.57	31.60	30.66	30.36	32.61	28.72
26	27.06	25.70	26.85	27.39	28.33	29.73	30.59	31.63	31.09	30.21	32.28	28.69
27	27.13	25.70	26.87	27.15	28.02	29.86	30.55	31.56	31.29	29.88	32.25	28.64
28	27.19	25.68	27.00	27.23	28.43	30.10	30.56	31.29	31.42	30.10	32.58	28.63
29	27.20	25.59	27.17	27.22	28.57	30.21	30.49	31.52	31.30	29.98	32.78	28.78
30	26.77	25.73	27.25	27.20	---	30.30	30.42	31.54	31.24	30.20	32.90	28.58
31	26.51	---	27.29	27.34	---	30.16	---	31.27	---	30.35	32.62	---
LOW	27.77	25.94	27.29	27.73	28.57	30.30	30.59	31.63	31.59	31.55	32.90	32.66
HIGH	26.16	25.02	25.31	25.96	26.99	28.19	29.80	30.43	30.29	29.88	30.65	28.58

WTR YR 1984 MEAN 28.93 LOW 32.90 HIGH 24.98



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GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS

180052066305001. Local number, 88.
LOCATION.--Lat 18°00'52", long 66°30'50".
Owner: Luce and Co.
Name: Hacienda Potala.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 19 in (48 cm). Depth 143 ft (43.6 m).
DATUM.--Altitude of land-surface datum is about 42.65 ft (13 m) above mean sea level. Measuring point: Top of shelter floor, 2.20 ft (0.67 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumpage of nearby well. Station discontinued, Jan. 1,1973. Reactivated, Apr. 15, 1976.
PERIOD OF RECORD.--May 1968, January 1973; April 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.50 ft (1.37 m) below land-surface datum; Feb. 26, 1971; lowest measured, 37.89 ft (11.55 m) below land-surface datum, July 16, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	17.00	Jan. 13	c21.23	Apr. 10	17.06	July 9	21.20
Nov. 4	15.60	Feb. 17	15.44	May 3	18.49	Aug. 7	28.80
Dec. 8	13.35	Mar. 23	16.68	June 6	c27.18	Sept. 5	21.43

175822066134801. Local number, 124.
LOCATION.--Lat 17°58'22", long 66°13'48".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Coquí 2.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 to 12 in (40 to 30 cm), cased 16 in (40 cm) 20-40 ft (6.1-12.2 m), 12 in (30 cm) 2-20 ft (0.61-6.1 m); perforated 20-118 ft (6.1-36.0 m). Depth 118 ft (36.0 m).
DATUM.--Altitude of land-surface datum is about 26 ft (7.9 m) above mean sea level. Measuring point: Airline hole in pump base, 2.2 ft (0.67 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--April 24, 1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a9.25 ft (a2.82 m) below land-surface datum, Nov. 29, 1979; lowest measured, a54.70 ft (a16.67 m) below land-surface datum, July 7, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	a13.99	Jan. 13	a14.02	Apr. 6	a38.70	July 9	a39.34
Nov. 22	a13.22	Feb. 17	a32.37	May 3	a45.63	Aug. 6	a20.05
Dec. 9	a12.80	Mar. 23	a33.47	June 12	a37.54	Sept. 27	a13.35

175750066225800. Local number, 144.
LOCATION.--Lat 17°57'50", long 66°22'58".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Jauca south well, site 1.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-50 ft (0-15.2 m), perforated 45-50 ft (13.7-15.2 m). Depth 50 ft (15.2 m).
DATUM.--Altitude of land-surface datum is about 15.98 ft (4.87 m) above mean sea level. Measuring Point: Hole side of 8 in (20 cm) casing, 3.2 ft (0.98 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.48 ft (2.89 m) below land-surface datum, Jan. 20, 1982; lowest measured, 11.90 ft (3.63 m) below land-surface datum, Feb. 9, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	10.58	Jan. 13	10.03	Apr. 10	10.93	July 9	10.90
Nov. 4	10.37	Feb. 17	10.75	May 3	11.00	Aug. 7	11.87
Dec. 8	10.02	Mar. 23	11.15	June 6	10.79	Sept. 27	10.40

a Pumping.
c Pumping nearby well.

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS

175750066225801. Local number, 145.
LOCATION.--Lat 17°57'50", long 66°22'58".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Jauca north well, site 1
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-250 ft (0-76.2 m), perforated 245-250 ft (74.7-76.2 m). Depth 250 ft (76.2 m).
DATUM.--Altitude of land-surface datum is about 16.11 ft (4.91 m) above mean sea level. Measuring point: Hole side of 8 in (20 cm) casing, 1.5 ft (0.46 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.51 ft (2.90 m) below land-surface datum, Jan. 20, 1982; lowest measured, 13.23 ft (4.03 m) below land-surface datum, Jan. 6, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	10.68	Jan. 13	10.66	Apr. 10	11.50	July 9	11.43
Nov. 4	10.47	Feb. 17	9.98	May 3	11.53	Aug. 7	12.04
Dec. 8	10.18	Mar. 23	11.36	June 6	11.39	Sept. 27	10.62

175734066233300. Local number, 146.
LOCATION.--Lat 17°57'34", long 66°23'33".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Hacienda Alomar west well, site 3.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-70 ft (0-21.3 m), perforated 65-70 ft (19.8-21.3 m). Depth 70 ft (21.3 m).
DATUM.--Altitude of land-surface datum is about 18.74 ft (5.71 m) above mean sea level. Measuring point: Hole side of 8 in (20 cm) casing, 2.5 ft (0.76 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--June 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.32 ft (2.54 m) below land-surface datum, June 3, 1981; lowest measured, 12.49 ft (3.81 m) below land-surface datum, Aug. 17, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	11.13	Jan. 13	9.27	Apr. 10	10.50	July 9	10.30
Nov. 4	9.23	Feb. 17	10.00	May 3	10.69	Aug. 7	11.56
Dec. 8	9.07	Mar. 23	10.29	June 6	9.74	Sept. 27	9.06

175734066233301. Local number, 147.
LOCATION.--Lat 17°57'34", long 66°23'33".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Hacienda Alomar east well, site 3.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-250 ft (0-76.2 m), perforated 245-250 ft (74.7-76.2 m). Depth 250 ft (76.2 m).
DATUM.--Altitude of land-surface datum is about 18.80 ft (5.73 m) above mean sea level. Measuring point: Top of 8 in (20 cm) casing, 3.60 ft (1.10 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--June 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.37 ft (4.08 m) below land-surface datum, January 13, 1984; lowest measured, 15.05 ft (4.59 m) below land-surface datum, August 7, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	13.86	Jan. 13	13.37	Apr. 10	14.22	July 9	14.30
Nov. 4	13.69	Feb. 17	14.00	May 3	14.40	Aug. 7	15.05
Dec. 8	13.50	Mar. 23	14.31	June 6	14.26	Sept. 27	13.66

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS

175756066244000. Local number, 148.
LOCATION.--Lat 17°57'56", long 66°24'40".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Playa Santa Isabel east well, site 2.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-250 ft (0-76.2 m), diameter 2 in (5 cm), cased 0-200 ft (0-61.0 m), perforated 195-200 ft (59.4-61.0 m), concreted 200-250 ft (61.0-76.2 m). Depth 200 ft (61.0 m).
DATUM.--Altitude of land-surface datum is about 21.20 ft (6.46 m) above mean sea level. Measuring point: Hole side of 8 in (20 cm) casing, 2.8 ft (0.85 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--January 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.82 ft (3.91 m) below land-surface datum, Dec. 23, 1981; lowest measured, 29.45 (8.98 m) below land-surface datum, Jan. 13, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	14.1[illegible]	Jan. 13	14.66	Apr. 10	16.19	July 9	16.85
Nov. 4	15.29	Feb. 17	15.20	May 3	16.20	Aug. 7	17.42
Dec. 8	14.20	Mar. 23	16.20	June 6	17.60	Sept. 5	18.61

175756066244001. Local number, 149.
LOCATION.--Lat 17°57'56", long 66°24'40".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Playa Santa Isabel west well, site 2.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-250 ft (0-76.2 m), diameter 2 in (5 cm), cased 0-250 ft (0-76.2 m), perforated 245-250 ft (74.7-76.2 m), concreted 200-250 ft (61.0-76.2 m). Depth 250 ft (76.2 m).
DATUM.--Altitude of land-surface datum is about 21.20 ft (6.46 m) above mean sea level. Measuring point: Hole side of 8 in (20 cm) casing, 2.8 ft (0.85 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--January 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.07 ft (3.68 m) below land-surface, Dec. 23, 1981; lowest measured, 26.92 ft (8.21 m) below land-surface datum, Jan. 13, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	13.44	Jan. 13	13.09	Apr. 10	14.64	July 9	15.00
Nov. 4	13.09	Feb. 17	13.50	May 3	15.62	Aug. 7	16.34
Dec. 8	13.07	Mar. 23	14.54	June 6	15.85	Sept. 5	17.81

175922066495901. Local number, 16.
LOCATION.--Lat 17 59'22", long 66°49'59".
Owner: Sucesión Lluveras.
Name: Central San Francisco.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 20 in (51 cm). Depth 185 ft (56.4).
DATUM.--Altitude of land-surface datum is about 30 ft (9.1 m) above mean sea level. Measuring point: Top of shelter's wooden base, 4.06 ft (1.24 m) above land-surface datum.
REMARKS.--Recording observation well (Nov. 9, 1960 to Mar. 23, 1965). Water levels affected by pumpage of nearby wells.
PERIOD OF RECORD.--November 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.43 ft (0.44 m) below land-surface datum, Dec. 22, 1960; lowest measured, 35.76 ft (10.90 m) below land-surface datum, Mar. 7, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 3	6.23	Jan. 17	5.98	Apr. 3	6.62	July 2	1.85
Nov. 1	6.15	Feb. 15	4.94	May 1	6.75	Aug. 2	7.34
Dec. 6	6.30	Mar. 20	6.44	June 4	5.91	Sept. 5	8.28

180057066361101. Local number, 21.
LOCATION.--Lat 18°00'57", long 66°36'11".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Alhambra.
AQUIFER.--Ponce Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply artesian well. diameter 20 in (51 cm), cased 300 ft (91.4 m), perforated 80-300 ft (24.4-91.4 m). Depth 300 ft (91.4 m).
DATUM.--Altitude of land-surface datum is about 53 ft (16.2 m) above mean sea level. Measuring point: Bottom edge 1.5 in (3.8 cm) pipe in concrete pump base, 0.7 ft (0.21 m) below land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--November 1958 to August 10, 1972; January 17, 1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.43 ft (5.31 m) below land-surface datum, Dec. 14, 1960; lowest measured, 97.61 ft (29.75 m) below land-surface datum, Aug. 8, 1967.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 3	a80.35	Jan. 18	a72.58	Apr. 4	a75.82	July 5	a81.70
Nov. 2	a73.00	Feb. 16	a72.80	May 2	a80.30	Aug. 3	a83.59
Dec. 7	a72.84	Mar. 21	a77.32	June 6	a80.00	Sept. 5	a82.94

180150066474901. Local number, 27.
LOCATION.--Lat 18°01'50", long 66°47'49".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Quebradas.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 to 12 in (41 to 30 cm), cased 16 in (41 cm) 0-40 ft (0-12.2 m), 12 in (30 cm) 0-120 ft (0-36.6 m), perforated 40-120 ft (12.2-36.6 m). Depth 120 ft (36.6 m).
DATUM.--Altitude of land-surface datum is about 59 ft (18.0 m) above mean sea level. Measuring point: Top of 1.0 in (2.54 cm) pipe in pump base, 1.1 ft (0.34 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--November 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.72 ft (7.84 m) below land-surface datum, Oct. 8, 1959; lowest measured, 75.1 ft (22.89 m) below land-surface datum, June 27, 1972.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 3	a30.90	Jan. 18	a33.38	Apr. 4	a36.35	July 3	a42.60
Nov. 2	a32.59	Feb. 16	a32.81	May 2	a39.86	Aug. 2	a40.81
Dec. 7	a34.10	Mar. 20	a35.39	June 4	a37.44	Sept. 5	a40.36

a Pumping.

GROUND-WATER LEVELS

RIO INABON TO RIO LOCO BASINS

180110066473501. Local number, 74.
LOCATION.--Lat 18°01'10", long 66°47'35".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Guayanilla.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 in (41 cm), cased 0-103 ft (0-31.4 m), perforated 39-103 ft (11.9-31.4 m). Depth 102 ft (31.1 m).
DATUM.--Altitude of land-surface datum is about 34 ft (10.4 m) above mean sea level. Measuring point: Airline hole in pump base, 3.0 ft (0.91 m) above land-surface datum.
REMARKS.--Observation well. Drilled to 195 ft (59.44 m), plugged back to 102 ft (31.1 m).
PERIOD OF RECORD.--August 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.56 ft (2.61 m) below land-surface datum, Oct. 21, 1960; lowest measured, 90.50 ft (27.58 m) below land-surface datum, Aug. 13, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 3	a15.87	Jan. 18	a15.25	Apr. 4	a15.76	July 3	a57.45
Nov. 2	a15.80	Feb. 16	a15.33	May 2	a16.50	Aug. 2	18.40
Dec. 7	a15.75	Mar. 20	a15.53	June 4	a20.55	Sept. 5	a48.55

180058066502701. Local number, 131.
LOCATION.--Lat 18°00'58", long 66°50'27".
Owner: Union Carbide Corporation.
Name: Yauco 1 or UCC 2.
AQUIFER.--Alluvium of Quaternary Age and limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled observation well, casing slotted 20-145 ft (6.1-44.2 m), open hole below 145 ft (44.2 m). Depth 156 ft (47.6 m).
DATUM.--Altitude of land-surface datum is about 66 ft (20.1 m) above mean sea level. Measuring point: Top of 3 in (0.08 m) pipe, 2.5 ft (0.76 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--August 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.46 ft (0.14 m) below land-surface datum; June 14, 1979; lowest measured, 44.95 ft (13.70 m) below land-surface datum, May 20, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 3	9.60	Jan. 17	8.08	Apr. 3	10.38	July 2	12.24
Nov. 1	9.14	Feb. 15	8.67	May 1	11.59	Aug. 2	12.13
Dec. 6	8.22	Mar. 19	9.72	June 4	11.50	Sept. 5	12.18

a Pumping.

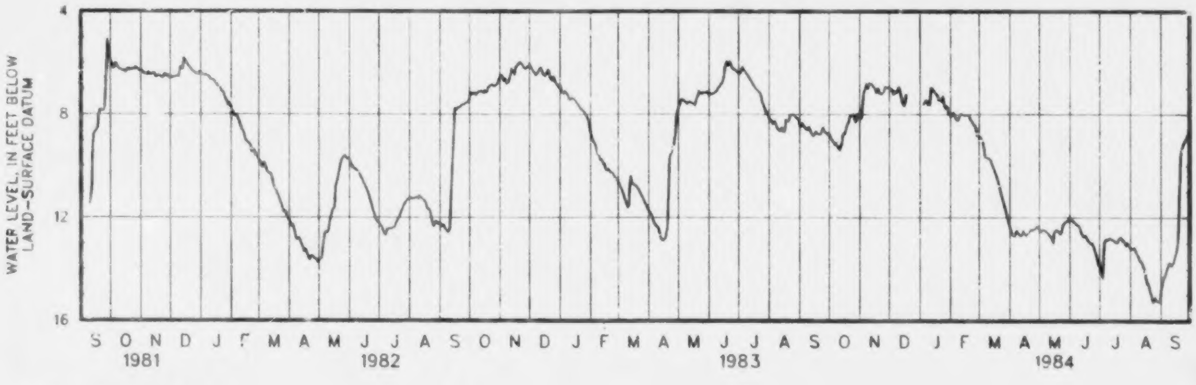
GROUND-WATER LEVELS

RIO INABON TO RIO LOCO BASINS

180133066503301. Local number, 132.
LOCATION.--Lat 18°01'33", long 66°50'33".
Owner: Pittsburg Plate Glass 4.
Name: Yauco 2.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled observation well, cased 20 in (51 cm) 0-20 ft (0-6.1 m), 12 in (30 cm) perforated pipe 20-84 ft (6.1-25.61 m), 10 in (25 cm) perforated pipe 84-190 ft (25.61-57.93 m). Depth 190 ft (57.93 m).
Datum.--Altitude of land-surface datum is about 75 ft (22.87 m) above mean sea level. Measuring point: Top of shelter floor, 2.35 ft (0.72 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--July 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, +0.12 ft (+0.04 m) below land-surface datum, July 19, 1979; lowest, 36.91 ft (11.25 m) below land-surface datum, June 27, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.76	8.12	6.90	---	8.06	8.92	12.34	12.45	12.07	13.77	13.15	14.83
2	8.77	8.16	7.04	---	8.02	8.87	12.43	12.50	12.07	14.01	13.21	14.67
3	8.91	8.13	6.99	---	8.04	8.94	12.63	12.53	12.08	14.14	13.20	14.47
4	8.97	7.63	7.03	7.59	7.93	8.96	12.65	12.49	12.10	14.26	13.22	14.27
5	9.06	7.15	7.22	7.61	7.97	9.09	12.70	12.47	12.13	13.55	13.15	14.28
6	9.09	7.07	7.20	7.51	8.13	9.33	12.71	12.47	12.19	12.96	13.22	14.14
7	9.18	6.97	7.09	7.46	8.17	9.64	12.53	12.50	12.23	12.87	13.34	14.00
8	9.13	6.84	7.15	7.46	8.22	9.65	12.51	12.54	12.26	12.94	13.41	13.89
9	9.10	6.98	7.15	7.61	8.22	9.66	12.55	12.56	12.23	12.87	13.50	13.79
10	9.25	6.99	6.99	7.59	8.05	9.69	12.62	12.62	12.31	12.82	13.61	13.75
11	9.32	6.78	6.94	7.62	7.97	9.70	12.65	12.67	12.37	12.80	13.68	13.84
12	9.39	6.91	7.09	6.97	7.99	9.73	12.66	12.70	12.51	12.82	13.67	13.96
13	9.23	6.83	7.31	6.97	8.00	9.79	12.70	12.76	12.62	12.83	13.76	13.78
14	9.16	6.83	7.50	7.01	8.01	9.90	12.61	12.85	12.68	12.85	13.89	13.75
15	8.82	6.93	7.59	7.09	8.03	10.00	12.52	12.95	12.74	12.87	13.97	13.59
16	8.72	6.94	7.64	7.15	8.02	10.11	12.60	12.59	12.72	12.90	14.20	13.44
17	8.76	7.07	7.52	7.19	8.02	10.22	12.65	12.52	12.69	12.94	14.37	13.30
18	8.63	7.16	7.22	7.23	8.02	10.32	12.69	12.48	12.80	12.96	14.55	13.04
19	8.45	6.99	---	7.28	8.02	10.43	12.58	12.48	12.86	12.98	14.53	12.24
20	8.35	6.98	---	7.43	8.02	10.57	12.53	12.53	12.92	12.94	14.71	10.79
21	8.23	7.18	---	7.55	8.19	10.71	12.51	12.56	12.95	12.80	14.87	9.66
22	8.10	7.18	---	7.35	8.21	10.86	12.45	12.61	13.00	12.76	14.97	9.38
23	8.05	7.21	---	7.49	8.29	11.01	12.47	12.63	13.03	12.90	15.13	9.25
24	8.04	7.18	---	7.29	8.35	11.16	12.47	12.50	12.93	12.90	15.27	9.14
25	8.02	7.18	---	7.53	8.43	11.30	12.46	12.28	13.12	12.85	15.23	9.04
26	8.00	7.05	---	7.70	8.43	11.45	12.45	12.23	13.24	12.95	15.11	8.98
27	8.17	6.93	---	7.76	8.57	11.60	12.42	12.19	13.36	13.03	15.19	8.91
28	8.27	6.98	---	7.67	8.31	11.75	12.36	12.15	13.49	13.08	15.21	8.80
29	8.20	6.97	---	7.71	8.81	11.89	12.34	12.14	13.69	12.98	15.23	8.74
30	7.97	6.95	---	7.96	---	12.04	12.37	12.12	13.84	13.05	15.25	8.68
31	8.04	---	---	7.92	---	12.19	---	12.08	---	13.10	15.25	---
LOW	9.39	8.16	---	---	8.81	12.19	12.71	12.95	13.84	14.26	15.27	14.83
HIGH	7.97	6.78	---	---	7.93	8.92	12.34	12.08	12.07	12.76	13.15	8.68



+ Above land-surface datum.

RIO INABON TO RIO LOCO BASINS

180120066503201. Local number, 134.
LOCATION.--Lat 18°01'20", long 66°50'32".
Owner: Union Carbide Corporation.
Name: Yauco 4 or UCC 1.
AQUIFER.--Alluvium of Quaternary Age and limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled observation well, casing slotted 20-140 ft (6.1-42.7 m) open hole 140-163 ft (42.7-49.7 m). Depth 163 ft (49.7 m).
DATUM.--Altitude of land-surface datum is about 87 ft (26.5 m) above mean sea level. Measuring point: Top of 3 in (0.08 m) pipe, 3.4 ft (1.04 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--July 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.90 ft (2.41 m) below land-surface datum; June 14, 1979; lowest measured, 37.84 ft (11.53 m) below land-surface datum, June 27, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 3	11.95	Jan. 17	11.28	Apr. 3	14.15	July 8	16.94
Nov. 1	12.01	Feb. 15	11.66	May 1	15.39	Aug. 2	16.58
Dec. 6	11.50	Mar. 19	13.22	June 4	15.28	Sept. 5	17.80

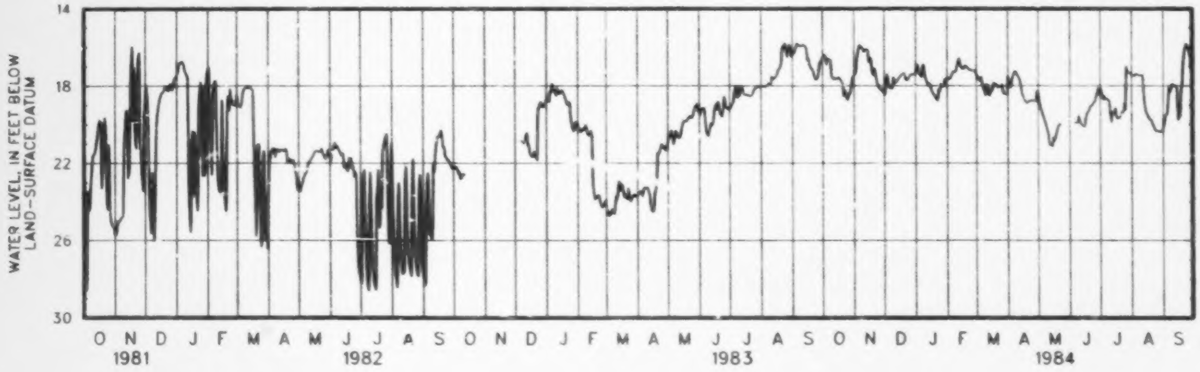
GROUND-WATER LEVELS

RIO INABON TO RIO LOCO BASINS

175950066354201. Local number, 141.
LOCATION.--Lat 17°59'50", long 66°35'42".
Owner: P.R. Aqueduct and Sewer Authority.
Name : Resteurada 8A.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused public supply well, diameter 16 to 10 in (41 to 25 cm), cased 16 in (41 cm) 2-20 ft (0.61-6.10 m), perforated 20-130 ft (6.10-39.63 m), 10 in (25 cm) 128-165 ft (39.02-50.30 m), perforated. Depth 165 ft (50.30 m).
DATUM.--Altitude of land-surface datum is about 24 ft (7.32 m) above mean sea level. Measuring Point: Bottom edge of hole on side of casing, 1.90 ft (0.58 m) above land-surface datum, 26.15 ft (7.97 m) above mean sea level.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--Oct. 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.65 ft (4.77 m) below land-surface datum, Aug. 30, 1983; lowest, 28.59 ft (8.714 m) below land-surface datum, July 9, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.55	17.50	18.27	17.34	17.49	17.43	17.51	18.33	---	18.27	17.43	20.22
2	16.49	17.40	18.44	17.29	17.53	17.45	17.65	18.72	---	18.19	17.44	20.04
3	16.41	17.33	17.71	15.90	17.61	17.63	18.01	18.97	---	18.50	17.46	19.52
4	16.47	16.61	17.42	17.23	17.44	17.70	18.04	19.23	---	18.59	17.49	19.47
5	16.97	16.25	17.83	17.37	17.53	17.75	17.79	19.39	---	18.55	17.44	19.45
6	16.60	15.99	18.02	17.43	17.38	17.55	17.52	19.57	19.90	18.59	17.38	19.37
7	16.64	15.90	18.10	17.51	17.27	17.91	17.39	19.70	19.93	18.58	17.40	19.07
8	16.65	15.96	18.12	15.95	17.27	18.15	17.26	19.88	19.97	18.56	17.44	18.29
9	16.56	16.03	18.13	15.92	17.29	18.22	17.27	20.06	19.92	18.71	17.45	18.15
10	17.49	16.10	17.57	17.60	17.22	18.41	17.39	20.22	19.62	18.90	17.45	17.91
11	17.60	16.22	17.89	17.52	16.96	17.92	17.49	20.45	19.81	19.49	17.48	17.96
12	17.65	16.19	17.32	17.78	16.71	17.95	17.59	20.95	19.91	19.77	17.46	17.98
13	17.60	16.12	17.82	17.91	16.59	18.36	17.70	21.05	20.01	19.65	18.32	18.31
14	17.63	16.11	17.68	17.99	16.93	18.51	17.93	21.06	20.05	19.61	18.91	18.05
15	17.65	16.15	17.47	17.90	17.03	18.19	18.35	21.11	20.10	19.27	19.31	18.08
16	17.62	16.77	17.57	18.11	17.09	18.28	18.53	20.72	20.09	19.19	19.43	19.77
17	17.57	16.59	17.49	18.27	17.11	18.16	18.63	20.33	19.65	19.51	19.54	19.63
18	17.63	16.58	17.43	18.36	17.07	17.95	18.75	20.68	19.47	19.69	19.65	19.53
19	17.71	17.21	17.37	18.44	16.95	17.93	18.82	20.47	19.36	19.59	19.75	19.26
20	17.79	17.45	17.35	18.52	16.97	17.89	18.87	20.26	19.30	19.66	19.75	17.80
21	17.91	17.12	17.35	18.59	17.02	17.94	18.87	20.07	19.13	19.59	19.86	16.79
22	18.53	17.16	17.66	18.71	17.11	18.07	18.81	20.31	19.05	19.61	19.93	16.33
23	18.26	17.53	17.72	18.76	17.15	18.05	18.77	19.96	19.02	19.55	20.11	16.07
24	18.27	17.94	17.67	18.21	17.18	18.05	18.77	---	18.95	19.39	20.25	15.84
25	18.65	17.96	17.53	18.25	17.17	17.96	18.77	---	18.86	18.93	20.33	15.86
26	18.71	18.10	17.49	17.90	17.20	17.91	18.73	---	18.83	19.12	20.33	16.03
27	18.50	18.17	17.44	18.02	17.22	18.26	18.73	---	18.57	17.00	20.33	16.20
28	18.33	18.15	17.40	18.02	17.20	18.39	18.76	---	18.44	17.32	20.37	16.42
29	18.20	18.23	17.41	18.00	17.28	18.41	18.80	---	18.17	17.32	20.37	17.02
30	17.80	18.33	17.42	17.55	---	18.43	18.23	---	18.37	17.30	20.37	16.88
31	17.54	---	17.40	17.91	---	18.44	---	---	---	17.38	20.31	---
LOW	18.71	18.33	18.44	18.76	17.69	18.51	18.37	---	---	19.77	20.37	20.22
HIGH	16.41	15.90	17.35	15.90	16.59	17.43	17.26	---	---	17.00	17.38	15.84



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GROUND-WATER LEVELS

RIO GUANAJIBO BASIN

180933067050801. Local number, 40.
LOCATION.--Lat 18°09'33", long 67°05'08".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Rosario.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 16 to 12 in (41 to 30 cm), cased 16 in (41 cm) 0-30 ft (0-9.1 m) 12 in (30 cm) 0-60 ft (0-18.3 m); perforated 12 (30 cm) 10-60 ft (3.0-18.3 m). Depth 105 (32.0 m).
DATUM.--Altitude of land-surface datum is about 164 ft (50.0 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe, 2.7 ft (0.82 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--July 1960 to November 1971; May 1973; March 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.20 ft (0.06 m) below land-surface datum, Aug. 3, 1983; lowest measured, 37.30 ft (11.37 m) below land-surface datum, May 7, 1973.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	a14.31	Jan. 13	a14.43	Apr. 5	a14.84	Aug. 27	a14.25
Nov. 30	a14.28	Feb. 9	a14.71	June 7	12.52	Sept. 13	11.30
Dec. 8	a14.43	Mar. 6	a14.74	July 12	13.80		

181018067091601. Local number, 43.
LOCATION.--Lat 18°10'18", long 67°09'16".
Owner: Mayaguez Sugar Co.
Name: Central Rochelaise.
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in (30 cm), cased 0-45 ft (0-13.7 m), perforated 0-45 ft (0-13.7 m). Depth 80 ft (24.4 m).
DATUM.--Altitude of land-surface datum is about 7 ft (2.1 m) above mean sea level. Measuring point: Top of 12 in (30 cm) casing, 1.9 ft (0.58 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--August 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.59 ft (+0.18 m) above land-surface datum, June 6, 1984; lowest measured, 2.70 ft (0.82 m) below land-surface datum, Apr. 15, 1970.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	+0.50	Jan. 12	+0.45	Apr. 6	+0.47	July 11	+0.24
Nov. 3	+0.53	Feb. 8	+0.55	May 3	0.22	Aug. 10	0.53
Dec. 7	+0.53	Mar. 5	+0.42	June 6	+0.59	Sept. 12	+0.58

+ Above land-surface datum.
a Pumping.

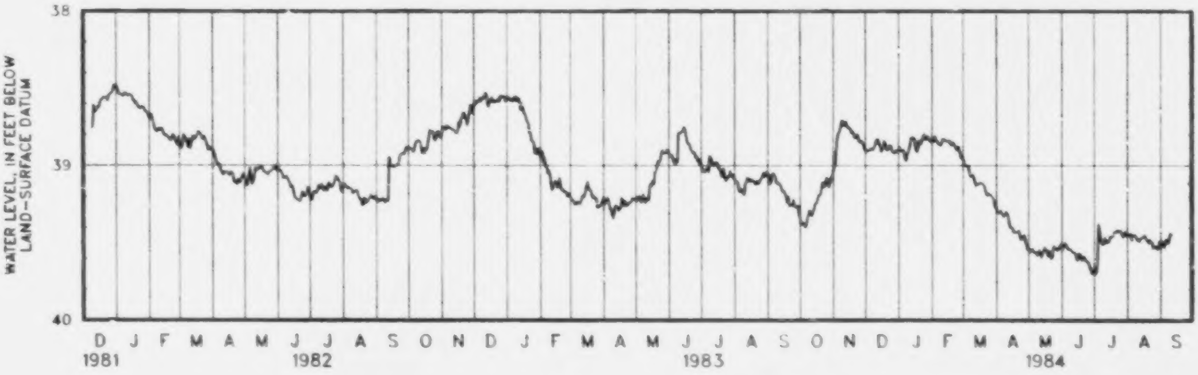
GROUND-WATER LEVELS

RIO GUANAJIBO BASIN

180132067033801. Local number, 143.
LOCATION.--Lat 18°01'32", long 67°,03'38".
  Owner: Pedro P. Vivoni.
  Name : Vivoni, Hacienda Amistad.
AQUIFER.--Limestone of unknown age.
WELL CHARACTERISTICS.--Drilled unused irrigation well, diameter 12 in (30 cm). Depth 200 ft (60.96 m).
DATUM.--Altitude of land-surface datum is about 52.5 ft (16.0 m) above mean sea level. Measuring Point: Hole side of casing, 0.80 ft (0.24 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--Dec. 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 38.00 ft (11.58 m) below land-surface datum, Sept. 19-20, 1982; lowest, 39.34 ft (11.99 m) below land-surface datum, Apr. 10, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39.34	39.04	38.90	38.90	38.95	38.96	39.29	39.56	39.53	39.67	39.44	39.49
2	39.33	39.01	38.91	38.88	38.95	38.99	39.30	39.56	39.56	39.70	39.45	39.49
3	39.38	38.96	38.90	38.90	38.94	39.00	39.31	39.55	39.52	39.69	39.45	39.50
4	39.37	38.90	38.90	38.91	38.81	39.00	39.30	39.54	39.53	39.66	39.44	39.52
5	39.38	38.82	38.90	38.90	38.86	39.00	39.29	39.54	39.51	39.38	39.46	39.50
6	39.40	38.79	38.89	38.90	38.94	39.01	39.31	39.56	39.53	39.43	39.47	39.48
7	39.39	38.75	38.89	38.95	38.89	39.05	39.32	39.56	39.56	39.48	39.45	39.49
8	39.36	38.75	38.90	38.97	38.95	39.07	39.33	39.56	39.54	39.50	39.45	39.50
9	39.32	38.71	38.88	38.93	38.87	39.07	39.32	39.58	39.54	39.51	39.46	39.46
10	39.29	38.71	38.87	38.91	38.85	39.05	39.30	39.57	39.55	39.50	39.48	39.44
11	39.30	38.74	38.86	38.89	38.82	39.06	39.31	39.55	39.56	39.47	39.45	39.45
12	39.32	38.73	38.91	38.86	38.83	39.11	39.31	39.57	39.55	39.49	39.49	---
13	39.30	38.72	38.83	38.92	38.85	39.13	39.34	39.59	39.56	39.50	39.47	---
14	39.28	38.75	38.86	38.93	38.86	39.12	39.40	39.57	39.59	39.49	39.47	---
15	39.25	38.75	38.83	38.92	38.94	39.12	39.40	39.55	39.61	39.49	39.46	---
16	39.24	38.76	38.91	38.83	38.86	39.12	39.40	39.53	39.61	39.46	39.46	---
17	39.24	38.76	38.89	38.90	38.85	39.11	39.43	39.54	39.57	39.46	39.45	---
18	39.20	38.79	38.87	38.91	38.86	39.11	39.43	39.56	39.57	39.46	39.47	---
19	39.19	38.78	38.84	38.90	38.87	39.12	39.43	39.58	39.60	39.45	39.49	---
20	39.19	38.79	38.87	38.86	38.85	39.12	39.45	39.55	39.61	39.43	39.49	---
21	39.15	38.82	38.90	38.85	38.85	39.16	39.43	39.58	39.59	39.43	39.50	---
22	39.11	38.82	38.90	38.85	38.87	39.17	39.42	39.60	39.59	39.42	39.46	---
23	39.12	38.80	38.88	38.82	38.89	39.19	39.45	39.59	39.61	39.43	39.49	---
24	39.16	38.80	38.87	38.81	38.90	39.19	39.49	39.56	39.62	39.42	39.50	---
25	39.10	38.86	38.87	38.80	38.89	39.19	39.47	39.52	39.62	39.42	39.53	---
26	39.08	38.85	38.91	38.83	38.93	39.19	39.45	39.53	39.63	39.42	39.52	---
27	39.11	38.85	38.91	38.83	38.92	39.19	39.45	39.56	39.65	39.45	39.52	39.12
28	39.16	38.84	38.92	38.81	38.95	39.23	39.49	39.55	39.67	39.46	39.53	39.11
29	39.13	38.86	38.90	38.82	38.95	39.21	39.51	39.54	39.70	39.44	39.54	39.10
30	39.08	38.89	38.91	38.86	---	39.25	39.56	39.52	39.67	39.43	39.52	39.13
31	39.07	---	38.90	38.86	---	39.27	---	39.51	---	39.45	39.49	---
LOW	39.40	39.04	38.92	38.97	38.95	39.27	39.56	39.60	39.70	39.70	39.54	---
HIGH	39.07	38.71	38.83	38.80	38.81	38.96	39.29	39.51	39.50	39.38	39.44	---



GROUND-WATER LEVELS

RIO YAGUEZ AND RIO GRANDE DE AÑASCO BASINS

181233067083201. Local number, 45.
LOCATION.--Lat 18°12'33", long 67°08'32".
Owner: Cervecería India, Inc.
Name: Well 1, Mayaguez.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in (30 cm), cased 0-82 ft (0-25.0 m). Depth 82 ft (25.0 m).
DATUM.--Altitude of land-surface datum is about 23 ft (7.0 m) above mean sea level. Measuring point: Top of wood cover, 0.9 ft (0.27 m) above land-surface datum.
REMARKS.--Observation well. Affected by nearby pumping.
PERIOD OF RECORD.--1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.41 ft (2.87 m) below land-surface datum, Sept. 15, 1977; lowest measured, 29.97 ft (9.13 m) below land-surface datum, Jan. 20, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	13.50	Jan. 12	13.33	Apr. 5	14.51	July 11	14.17
Nov. 3	13.08	Feb. 8	13.39	May 3	15.00	Aug. 9	13.81
Dec. 7	13.51	Mar. 5	13.11	June 7	15.18	Sept. 12	13.45

181522067090901. Local number, 53.
LOCATION.--Lat 18°15'22", long 67°09'09".
Owner: P.R. Ports Authority.
Name: Mayaguez Airport.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 8 in (20 cm), cased 0-114 ft (0-34.8 m), perforated 82-114 ft (25.0-34.8 m), open hole 114-353 ft (34.8-107.6 m). Depth 353 ft (107.6 m).
DATUM.--Altitude of land-surface datum is about 20 ft (6.1 m) above mean sea level. Measuring point: Slot in pump base, 0.4 ft (0.12 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--October 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.96 ft (0.29 m) below land-surface datum, Oct. 5, 1978; lowest measured, 8.70 ft (2.65 m) below land-surface datum, Feb. 14, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATION

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	2.62	Jan. 12	3.97	Apr. 5	5.55	July 12	2.32
Nov. 3	2.07	Feb. 8	4.72	May 3	6.09	Aug. 9	2.42
Dec. 7	2.78	Mar. 5	4.68	June 7	3.04	Sept. 12	2.04

GROUND-WATER LEVELS

RIO CULEBRINAS BASIN

182228067113301. Local number, 58.
LOCATION.--Lat 18°22'38", long 67°11'33".
   Owner: P.R. Aqueduct and Sewer Authority.
   Name: Aguada.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 20 in (51 cm) to 12 in (30 cm), cased 20 in (51 cm) 0-40 ft 0-40 ft (0-12.2 m), 12 in (30 cm) 0-60 ft (0-18.3 m), perforated 40-60 ft (12.2-18.3 m). Depth 160 ft (48.8 m).
DATUM.--Altitude of land-surface datum is about 30 ft (9.1 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe in pump base, 1.90 ft (0.58 m) above land-surface datum.
REMARKS.--Observation well. Piezometric head measured for highest water level.
PERIOD OF RECORD.--January 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.81 ft (+0.25 m) above land-surface datum, Sept. 12, 1975; lowest measured, 83.53 ft (25.46 m) below land-surface datum, Aug. 7, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	0.38	Jan. 12	2.49	Apr. 5	2.76	July 11	0.12
Nov. 3	0.70	Feb. 8	2.90	May 3	3.33	Aug. 9	1.24
Dec. 7	1.64	Mar. 5	2.13	June 6	1.55	Sept. 12	1.11

182018066593201. Local number, 83.
LOCATION.--Lat 18°20'18", long 66°59'32".
   Owner: P.R. Water Resources Authority.
   Name: San Sebastián.
AQUIFER.--Volcanic rock of Eocene Age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in (15 cm). Depth 300 ft (91.4 m).
DATUM.--Altitude of land-surface datum is about 230 ft (70.1 m) above mean sea level. Measuring point: Top of casing, 2.40 ft (0.73 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--May 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.95 ft (6.69 m) below land-surface datum, Apr. 15, 1976; lowest measured, 40.20 ft (12.25 m) below land-surface datum, July 21, 1970.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 4	27.90	Jan 11	29.72	Apr. 4	30.44	July 3	27.56
Nov. 3	27.85	Feb. 7	30.12	May 1	30.07	Aug. 8	29.20
Dec. 6	29.08	Mar. 1	30.18	June 5	27.96	Sept. 5	28.04

+ Above land-surface datum.

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Surface-Water Records for U.S. Virgin Islands

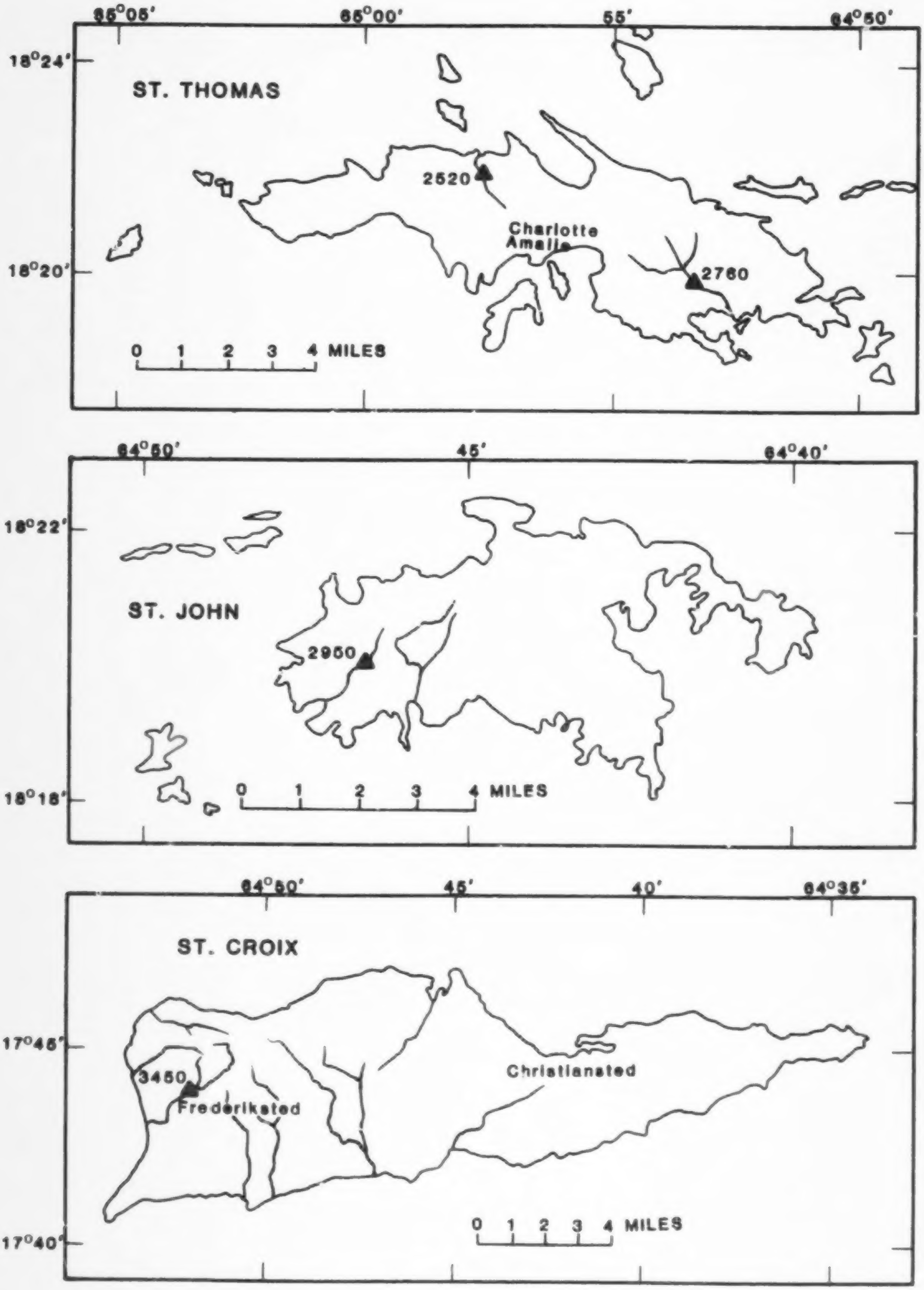
65°05'
65°00'
55'
64°50'
18°24'
ST. THOMAS
2520
Charlotte Amalie
2760
18°20'
0 1 2 3 4 MILES
64°50'
45'
64°40'
18°22'
ST. JOHN
2950
18°18'
0 1 2 3 4 MILES
64°50'
45'
40'
64°35'
ST. CROIX
17°45'
3450
Frederiksted
Christiansted
17°40'
0 1 2 3 4 MILES

Figure 26.--Location of surface-water stations in the U.S. Virgin Islands.

ST. THOMAS, U.S. VIRGIN ISLANDS

50252000 BONNE RESOLUTION GUT AT BONNE RESOLUTION, ST. THOMAS, VI

LOCATION.--Lat 18°21'57", long 64°57'34", Hydrologic Unit 21020001, on right bank near Hull Bay Road, 0.5 mi (0.8 km) upstream from Atlantic Ocean, and 2.5 mi (4.02 km) northwest of Fort Christian, Charlotte Amalie.

DRAINAGE AREA.--0.49 sq mi (1.27 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1962 to February 1967, March 1979 to April 1981, May 1982 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 280 ft (85.3 m), from topographic map. December 1962 to February 1967 at site about 100 ft (30.5 m) downstream at different datum. March 1979 to April 1981 at site about 100 ft (30.5 m) upstream at different datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--6 years (1964-66, 1980, 1983-84), 0.21 cu ft/s (0.0059 cu m/s), 5.82 in/yr (147.8 mm/yr), 152 acre-ft/yr (0.187 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,650 cu ft/s (46.7 cu m/s) Apr. 18, 1983, gage height, 7.00 ft (2.134 m), from floodmarks, from rating curve extended above 1.0 cu ft/s (0.03 cu m/s) on basis of critical-depth analysis and slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 cu ft/s (1.42 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 4	0915	58	1.64	1.52	0.463	June 5	1800	*63	1.78	1.56	0.475
Feb. 9	0015	56	1.59	1.50	0.457						

No flow parts or all of many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.03	.01	.02	.05	.02	.01	.04	.04	.02	.04	.02
2	.01	.03	2.1	.02	.05	.03	.00	.02	.05	.01	.03	.02
3	.01	.03	.09	.02	.05	.02	.01	.02	.05	.01	.01	.02
4	.02	10	.05	.03	.04	.03	.02	.03	.04	.02	.22	.02
5	.01	2.1	.03	.03	.05	.02	.01	.03	4.3	.02	.04	.02
6	.02	.23	.03	.05	.05	.01	.02	.04	.59	.02	.02	.02
7	.01	.14	.02	.03	.05	.01	.02	.04	.09	.02	.01	.02
8	.02	.10	.03	.05	.31	.02	.03	.02	.04	.02	.01	.02
9	.01	.09	.03	.06	2.5	.02	.02	.02	.03	.02	.01	.01
10	.02	.06	.04	.05	.07	.02	.02	.02	.02	.02	.02	.01
11	.01	.05	.04	.05	.04	.02	.04	.02	.02	.03	.02	.01
12	.02	.06	.03	.07	.04	.03	.02	.02	.02	.01	.02	.03
13	.01	.05	.03	.03	.02	.02	.03	.04	.01	.01	.01	.02
14	.02	.07	.03	.04	.03	.02	.03	.05	.01	.01	.02	.01
15	.01	.06	.03	.03	.03	.02	.03	.02	.01	.01	.02	.01
16	.01	.05	.03	.05	.02	.02	.03	.02	.02	.01	.02	.02
17	.01	.06	.03	.02	.03	.01	.04	.02	.01	.01	.01	.02
18	.01	.05	.03	.02	.05	.01	.03	.02	.01	.01	.01	.03
19	.01	.05	.05	.02	.05	.01	.05	.01	.02	.01	.01	.03
20	.02	.05	.05	.03	.05	.01	.04	.02	.02	.01	.01	.03
21	.01	.05	.05	.04	.05	.01	.05	.03	.02	.01	.01	.12
22	.02	.05	.04	.03	.05	.01	.05	.02	.02	.01	.06	.03
23	.02	.06	.03	.03	.05	.01	.03	.05	.02	.01	.01	.03
24	.02	.05	.02	.03	.04	.01	.03	.02	.01	.01	.01	.06
25	.06	.05	.02	.03	.02	.01	.05	.02	.01	.01	.01	.04
26	.02	.05	.04	.02	.03	.01	.05	.02	.01	.01	.02	.02
27	.02	.05	.05	.02	.03	.01	.03	.01	.01	.01	.02	.04
28	.03	.05	.03	.02	.04	.01	.02	.03	.01	.01	.02	.05
29	.02	.05	.05	.02	.03	.01	.03	.03	.02	.01	.02	.04
30	.06	.03	.03	.04	---	.01	.03	.02	.02	.01	.02	.05
31	.02	---	.02	.05	---	.01	---	.06	---	.02	.02	---
TOTAL	.58	13.87	3.16	1.05	4.12	.48	.87	.83	5.55	.42	.78	.88
MEAN	.019	.46	.10	.034	.14	.015	.029	.027	.19	.014	.025	.029
MAX	.06	10	2.1	.07	2.5	.03	.05	.06	4.3	.03	.22	.12
MIN	.01	.03	.01	.02	.02	.01	.00	.01	.01	.01	.01	.01
CFSM	.04	.94	.20	.07	.29	.03	.06	.06	.39	.03	.05	.06
IN.	.04	1.05	.24	.08	.31	.04	.07	.06	.42	.03	.06	.07
AC-FT	1.2	28	6.3	2.1	8.2	1.0	1.7	1.6	11	.8	1.5	1.7

CAL YR 1983 TOTAL 246.57 MEAN .68 MAX 169 MIN .01 CFSM 1.39 IN 18.68 AC-FT 489
WTR YR 1984 TOTAL 32.59 MEAN .089 MAX 10 MIN .00 CFSM .18 IN 2.47 AC-FT 65

ST. THOMAS, U.S. VIRGIN ISLANDS

50252000 BONNE RESOLUTION GUT AT BONNE RESOLUTION, ST. THOMAS, VI--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--MARCH 1983 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 26	1028	.05	1262	24.5	MAY, 23	1642	.048	2141	22.5
NOV, 30	1704	.03	1957	23.5	JUL, 26	1213	.005	2160	28.0
JAN, 23	1301	.03	2163	24.5	AUG, 24	1117	.009	1900	26.0
APR, 04	1350	.007	2020	25.0					

ST. THOMAS, U.S. VIRGIN ISLANDS

50276000 TURPENTINE RUN AT MARIENDAL, ST. THOMAS, VI

LOCATION.--Lat 18°19'48", long 64°52'58", Hydrologic Unit 21020001, on left bank, at Mariendal, 1.0 mi (1.6 km) upstream from mouth, and 3.3 mi (5.3 km) southeast of Fort Christian, Charlotte Amalie.

DRAINAGE AREA.--2.97 sq mi (7.69 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to April 1969, October 1978 to September 1980, June 1982 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 40 ft (12.2 m), from topographic map.

REMARKS.--Records poor. Since about 1975, low flow augmented by discharges from sewage plant.

AVERAGE DISCHARGES.--9 years (1964-68, 1979-80, 1983-84), 1.04 cu ft/s (0.029 cu m/s), 4.76 in/yr (121 mm/yr), 753 acre-ft/yr (0.93 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,710 cu ft/s (275 cu m/s) Apr. 18, 1983, gage height, 11.09 ft (3.380 m), from floodmark, from rating curve extended above 500 cu ft/s (14.2 cu m/s) on basis of slope area measurement and step-backwater analysis; no flow many days from 1963 to 1969, and in 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 cu ft/s (2.83 cu m/s) and maximums (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 4	0930	186	5.268	3.35	1.021	Sept. 17	2115	178	5.041	3.31	1.009
June 5	1715	*333	9.430	3.95	1.204						

No flow part of each day Apr. 12, May 7, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.45	.33	.43	.26	.38	.17	.39	.11	.89	.25	.40	.11
2	.45	.35	10	.28	.38	.15	.28	.10	.96	.15	.44	.09
3	.45	1.3	.76	.24	.53	.25	.23	.09	1.2	.22	.34	.08
4	.45	45	.36	.27	.48	.17	.24	.15	.85	.29	4.9	.10
5	.33	16	.42	.30	.67	.18	.22	.13	37	.27	.20	.83
6	.33	3.6	.49	.36	.56	.19	.26	.13	14	.27	.14	.10
7	.45	1.8	.28	.46	.54	.20	.31	.07	6.8	.36	.11	.09
8	.45	1.4	.44	.36	.63	.19	.27	.11	1.4	.42	.10	.10
9	.45	3.2	.25	.32	2.6	.18	.23	.10	1.0	.27	.09	.16
10	.45	1.4	.27	.46	.57	.28	.16	.10	.82	.23	.08	.10
11	.38	1.2	.28	.32	.48	.25	.16	.10	.90	.30	.08	.09
12	.45	1.1	.36	.36	.51	.23	.13	.18	1.0	.24	.09	.30
13	.38	1.0	.26	.39	1.0	.22	.16	.22	.80	.21	.11	.12
14	.45	1.0	.26	2.0	.44	.18	.18	.13	.50	.24	.08	.11
15	1.2	1.0	.26	.36	.96	.20	.30	.17	.38	.27	.12	.10
16	.45	.91	.22	1.1	.51	.22	.21	.16	.36	.17	.09	.20
17	.45	.86	.24	.46	.44	.38	.19	.18	2.0	.21	.08	8.1
18	.33	.80	.24	.49	.46	.29	.21	.19	1.0	.19	.09	6.2
19	.33	.70	.23	.38	.45	.24	.24	.26	.50	.19	.08	.87
20	.33	.60	.27	.50	.42	.24	.34	.30	.30	.26	.08	.65
21	.33	.86	.24	.78	.34	.26	.44	.14	.20	.22	.11	.40
22	.38	.54	.27	.90	.35	.25	.32	.16	.16	.33	1.4	.30
23	.38	.60	.38	.63	.32	.21	.25	.20	.13	.23	.17	.20
24	.33	.50	.30	.51	.34	.24	.28	.34	.12	.23	.13	.17
25	.33	.43	.26	.62	.38	.24	.31	.34	.11	.21	.18	.20
26	.48	.40	1.1	.60	.34	.22	.37	.34	.10	.22	.20	.60
27	.33	.40	.29	.48	.27	.24	6.3	.52	.20	.18	.09	1.1
28	.60	.38	.30	.55	.26	.23	1.4	.48	.13	.24	.09	2.8
29	1.5	.60	.40	.45	.19	.24	.18	.33	.12	.24	.09	.70
30	.56	.23	.77	.42	---	.15	.11	.46	.25	.18	.11	2.5
31	.36	---	.34	.46	---	.23	---	1.3	---	.19	5.2	---
TOTAL	14.59	88.49	20.97	16.07	15.80	6.92	14.67	7.59	74.18	7.46	15.47	27.47
MEAN	.47	2.95	.68	.52	.54	.22	.49	.24	2.47	.24	.50	.92
MAX	1.5	45	10	2.0	2.6	.38	6.3	1.3	37	.42	5.2	8.1
MIN	.33	.23	.22	.24	.19	.15	.11	.07	.10	.15	.08	.08
CFSM	.16	.99	.23	.18	.18	.07	.17	.08	.83	.08	.17	.31
IN.	.18	1.11	.26	.20	.20	.09	.18	.10	.93	.09	.19	.36
AC-FT	29	176	42	32	31	14	29	15	147	15	31	54

CAL YR 1983 TOTAL 1593.94 MEAN 4.37 MAX 1000 MIN .04 CFSM 1.47 IN 19.96 AC-FT 3160
WTR YR 1984 TOTAL 309.68 MEAN .85 MAX 45 MIN .07 CFSM .29 IN 3.88 AC-FT 614

ST. THOMAS, U.S. VIRGIN ISLANDS

50274000 TURPENTINE RUN AT MARIENDAL, ST. THOMAS, VI--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--MARCH 1983 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT, 26	1320	.61	2134	29.5	MAY, 23	1406	.30	2241	31.0
NOV, 29	1210	2.0	2179	25.5	JUL, 26	1001	.13	2130	27.5
JAN, 25	1000	.65	750	26.0	AUG, 24	0901	.03	1700	27.0
APR, 04	1026	.14	2100	27.0					

50295000 GUINEA GUT AT BETHANY, ST. JOHN, VI

LOCATION.--Lat. 18°19'55", long 64°46'50", Hydrologic Unit 21020001, 600 ft (183 m) southeast of Bethany Church, and 1.0 mi (1.6 km) east of Government House at Cruz Bay.

DRAINAGE AREA.--0.37 sq mi (0.96 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to October 1967, September 1982 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 260 ft (79.2 m), from topographic map. Prior to September 1982, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--6 years(1964-67, 1983-84), 0.072 cu ft/s (0.002 cu m/s), 2.64 in/yr (67.1 mm/yr), 52.16 acre-ft/yr (0.064 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 946 cu ft/s (26.8 cu m/s) Apr. 18, 1983, gage height, 5.33 ft (1.625 m), from floodmark, from rating curve extended above 1.0 cu ft/s (0.028 cu m/s) on basis of step-backwater analysis and slope-area measurement of peak flow; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10 cu ft/s (0.283 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 4	0845	*136	3.85	2.93	0.893	Nov. 4	2330	14	0.40	2.10	0.640

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01	.01	.01	.01	.00	.00	.01	.00	.01	.01	.00
2	.01	.01	.02	.01	.01	.00	.00	.01	.00	.01	.01	.00
3	.01	.01	.01	.01	.00	.00	.00	.01	.00	.01	.01	.01
4	.03	13	.01	.01	.00	.01	.01	.00	.00	.01	.11	.01
5	.02	2.5	.01	.01	.01	.00	.01	.00	.01	.01	.00	.00
6	.02	.29	.01	.01	.01	.01	.01	.00	.12	.01	.00	.00
7	.03	.08	.00	.01	.01	.01	.01	.00	.02	.00	.00	.00
8	.03	.04	.01	.01	.01	.01	.01	.00	.01	.00	.00	.00
9	.01	.03	.01	.01	.01	.01	.01	.00	.01	.01	.00	.00
10	.01	.02	.01	.01	.01	.01	.01	.00	.01	.00	.00	.00
11	.01	.02	.01	.01	.01	.01	.01	.00	.01	.01	.00	.00
12	.03	.03	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
13	.03	.04	.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
14	.01	.05	.01	.01	.01	.01	.01	.00	.01	.01	.00	.00
15	.02	.05	.01	.01	.01	.00	.01	.00	.01	.01	.00	.00
16	.02	.05	.01	.01	.00	.01	.01	.00	.01	.01	.00	.00
17	.02	.03	.01	.01	.00	.00	.01	.00	.01	.01	.00	.00
18	.02	.01	.01	.01	.00	.00	.01	.00	.01	.00	.01	.00
19	.02	.01	.01	.01	.00	.01	.01	.00	.01	.01	.01	.00
20	.01	.01	.01	.01	.00	.01	.01	.00	.01	.01	.00	.00
21	.02	.01	.01	.01	.00	.01	.01	.00	.01	.01	.01	.00
22	.02	.01	.01	.01	.00	.01	.00	.00	.01	.01	.00	.00
23	.02	.01	.01	.01	.01	.01	.00	.00	.01	.01	.00	.00
24	.01	.01	.01	.00	.00	.01	.00	.00	.01	.01	.00	.00
25	.00	.01	.01	.01	.00	.01	.00	.01	.01	.01	.00	.00
26	.01	.01	.01	.01	.00	.00	.00	.01	.01	.01	.00	.00
27	.01	.01	.01	.01	.00	.00	.01	.00	.01	.01	.00	.00
28	.01	.01	.01	.01	.00	.00	.01	.01	.01	.01	.00	.00
29	.01	.01	.01	.01	.00	.00	.01	.01	.01	.01	.00	.00
30	.01	.01	.01	.01	---	.00	.01	.01	.00	.01	.00	.00
31	.01	---	.01	.01	---	.00	---	.01	---	.01	.00	---
TOTAL	.50	16.39	.31	.30	.14	.18	.22	.11	.37	.26	.18	.03
MEAN	.016	.55	.010	.010	.005	.006	.007	.004	.012	.008	.006	.001
MAX	.03	13	.02	.01	.01	.01	.01	.01	.12	.01	.11	.01
MIN	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.04	1.49	.03	.03	.01	.02	.02	.01	.03	.02	.02	.003
IN.	.05	1.64	.03	.03	.01	.02	.02	.01	.04	.03	.02	.00
AC-FT	1.0	33	.6	.6	.3	.4	.4	.2	.7	.5	.4	.06

CAL YR 1983 TOTAL 162.93 MEAN .39 MAX 110 MIN .00 CFSM 1.05 IN 14.33 AC-FT 284
WTR YR 1984 TOTAL 18.99 MEAN .052 MAX 13 MIN .00 CFSM .14 IN 1.90 AC-FT 38

WATER QUALITY RECORDS

PERIOD OF RECORD.--MARCH 1983 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 27	0910	.006	2376	25.5	MAY, 15	1028	.002	2170	27.0
NOV, 30	0954	.007	2346	24.0	JUL, 25	1036	.007	2200	26.0
JAN, 24	0926	.004	2110	26.0	AUG, 25	0927	.002	2200	25.5
APR, 03	0943	.003	2100	23.5					

ST. CROIX, U.S. VIRGIN ISLANDS

50345000 JOLLY HILL GUT AT JOLLY HILL, ST. CROIX, VI

LOCATION.--Lat 17°44'00", long 64°51'47", Hydrologic Unit 21020002, on Mahogany Road at Jolly Hill, 1.8 mi (2.9 km) northeast of Frederiksted.

DRAINAGE AREA.--2.10 sq mi (5.44 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to December 1968. Monthly measurements, 1962, 69. October 1982 to current year.

GAGE.--Water-stage recorder and V-notch concrete control. Altitude of gage is 140 ft (42.7 m) from topographic map.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--7 years (1964-68, 1983-84), 0.027 cu ft/s (0.001 cu m/s), 0.17 in/yr (4.3 mm/yr), 19.6 acre-ft/yr (0.02 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 223 cu ft/s (6.315 cu m/s) Dec. 12, 1965, gage height, 3.15 ft (0.96 m); no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 cu ft/s (0.71 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Nov. 4	0945	*30	0.850	2.05	0.625

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.03	.13	.07	.08	.04	.05	.02	.02	.00	.00	.00
2	.08	.03	.13	.07	.07	.03	.04	.02	.00	.00	.00	.00
3	.07	.03	.14	.07	.06	.03	.05	.02	.00	.00	.00	.00
4	.07	.81	.15	.07	.05	.03	.04	.01	.00	.00	.00	.00
5	.08	.20	.14	.07	.05	.04	.03	.01	.00	.00	.00	.00
6	.07	.12	.14	.09	.05	.04	.03	.01	.00	.00	.00	.00
7	.07	.11	.14	.11	.08	.05	.03	.03	.00	.00	.00	.00
8	.07	.12	.13	.09	.10	.04	.03	.03	.00	.00	.00	.00
9	.07	.12	.12	.09	.09	.05	.03	.02	.00	.00	.00	.00
10	.06	.14	.12	.10	.08	.05	.03	.01	.00	.00	.00	.00
11	.06	.14	.13	.09	.06	.04	.03	.01	.00	.00	.00	.00
12	.06	.15	.11	.08	.06	.04	.02	.01	.00	.00	.00	.00
13	.07	.15	.10	.08	.06	.04	.02	.00	.00	.00	.00	.00
14	.06	.15	.10	.08	.06	.07	.01	.00	.00	.00	.00	.00
15	.06	.15	.11	.07	.06	.06	.01	.00	.00	.00	.00	.00
16	.05	.15	.11	.07	.07	.07	.01	.00	.00	.00	.00	.00
17	.05	.15	.11	.07	.06	.04	.01	.00	.00	.00	.00	.00
18	.05	.14	.11	.07	.06	.05	.01	.00	.00	.00	.00	.00
19	.05	.17	.10	.07	.06	.06	.01	.00	.00	.00	.00	.00
20	.04	.16	.11	.07	.06	.05	.01	.00	.00	.00	.00	.00
21	.04	.15	.10	.06	.06	.06	.01	.00	.00	.00	.00	.00
22	.06	.14	.09	.06	.06	.05	.01	.00	.00	.00	.00	.00
23	.05	.14	.09	.06	.05	.05	.00	.00	.00	.00	.00	.00
24	.04	.14	.09	.06	.06	.05	.00	.00	.00	.00	.00	.00
25	.04	.14	.08	.07	.04	.05	.00	.00	.00	.00	.00	.00
26	.03	.15	.10	.05	.04	.05	.00	.00	.00	.00	.00	.00
27	.03	.13	.09	.05	.04	.05	.04	.00	.00	.00	.00	.00
28	.02	.13	.09	.05	.05	.05	.08	.00	.00	.00	.00	.00
29	.03	.13	.08	.05	.04	.05	.04	.00	.00	.00	.00	.00
30	.04	.13	.08	.05	---	.05	.04	.00	.00	.00	.00	.00
31	.04	---	.08	.06	---	.05	---	.00	---	.00	.00	---
TOTAL	1.69	4.60	3.40	2.20	1.76	1.44	.72	.20	.02	.00	.00	.00
MEAN	.055	.15	.11	.071	.061	.046	.024	.006	.001	.000	.000	.000
MAX	.08	.81	.15	.11	.10	.07	.08	.03	.02	.00	.00	.00
MIN	.02	.03	.08	.05	.04	.03	.00	.00	.00	.00	.00	.00
CFSM	.03	.07	.05	.03	.03	.02	.01	.003	.000	.000	.000	.000
IN.	.03	.08	.06	.04	.03	.03	.01	.00	.00	.00	.00	.00
AC-FT	3.4	9.1	6.7	4.4	3.5	2.9	1.4	.4	.04	.00	.00	.00

CAL YR 1983 TOTAL 39.62 MEAN .11 MAX .81 MIN .00 CFSM .05 IN .70 AC-FT 79
WTR YR 1984 TOTAL 16.03 MEAN .044 MAX .81 MIN .00 CFSM .02 IN .28 AC-FT 32

50345000 JOLLY HILL GUT AT JOLLY HILL, ST. CROIX, VI--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--MARCH 1983 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON-DUCTANCE (UMHOS)	TEMPERA-TURE (DEG C)
OCT, 25	1113	.05	1133	25.5	FEB, 27	1209	.04	1030	24.5
DEC, 06	1324	.14	1036	24.5	APR, 02	1121	.06	1030	25.0
JAN, 26	1435	.06	9890	24.0	MAY, 14	1226	.00	1030	27.5

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Ground-Water Records
for
U.S. Virgin Islands

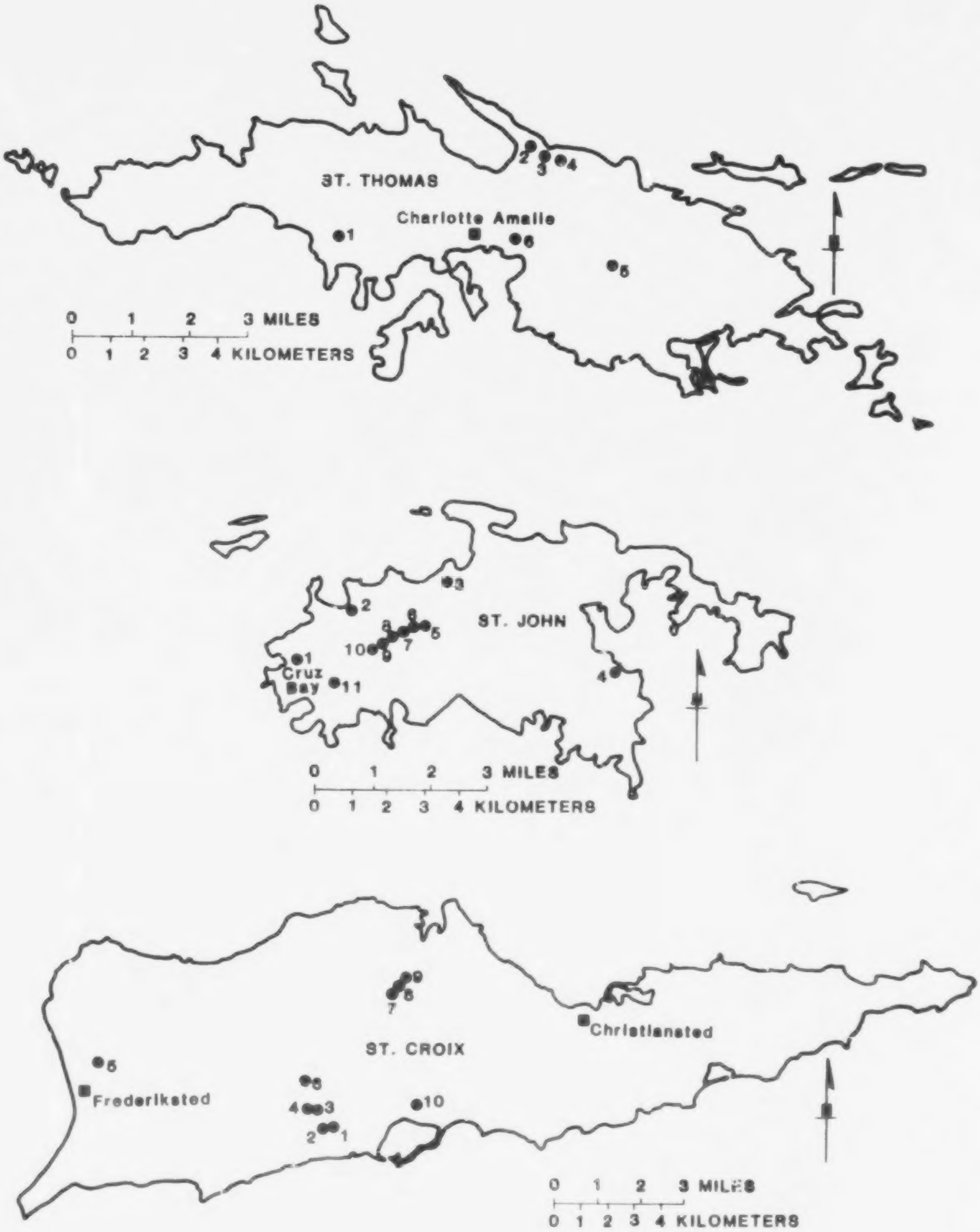

ST. THOMAS
Charlotte Amalie
1
2
3
4
5
6
0 1 2 3 MILES
0 1 2 3 4 KILOMETERS
ST. JOHN
Cruz Bay
1
2
3
4
5
6
7
8
9
10
11
0 1 2 3 MILES
0 1 2 3 4 KILOMETERS
ST. CROIX
Christiansted
Frederiksted
1
2
3
4
5
6
7
8
9
10
0 1 2 3 MILES
0 1 2 3 4 KILOMETERS

Figure 27.--Location of ground-water stations in the U.S. Virgin Islands.

GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174225064471900. Local number, 1.
LOCATION.--Lat 17°42'25", long 64°47'19".
Owner: Virgin Islands Government.
Name: Fairplains 6 (FP6).
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
DATUM.--Altitude of land-surface datum is about 20 ft (6.10 m) above mean sea level. Measuring point: Top of pump concrete base, 2.20 ft (0.67 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumping.
PERIOD OF RECORD.--
Water level: March 1982 to current year.
Chemical analyses: June 20, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.64 ft (4.77 m) below land-surface datum, Mar. 25, 1982; lowest water level measured, a58.57 ft (17.9 m) below land-surface datum, June 20, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 25	a55.94	Feb. 27	27.91	May 14	18.10	July 24	a55.94
Dec. 6	a56.50	Apr. 2	26.92	June 25	a55.91	Aug. 22	a56.63

a Pumping.

GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174225064472000. Local number, 2.

LOCATION.--Lat 17°42'25", long 64°47'20".
Owner: U.S. Government, Virgin Islands Government.
Name: USGS-10, Fairplains 2 (FP2).

AQUIFER: Alluvium and marl.

WELL CHARACTERISTICS: Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).

DATUM: Altitude of land-surface datum is about 20 ft (6.10 m) above mean sea level. Measuring point: Top of 0.5 in (0.01 m) hole at concrete base well, 3.00 ft (0.91 m) above land-surface datum.

REMARKS.--Observation recording well. Nearby pumping well.

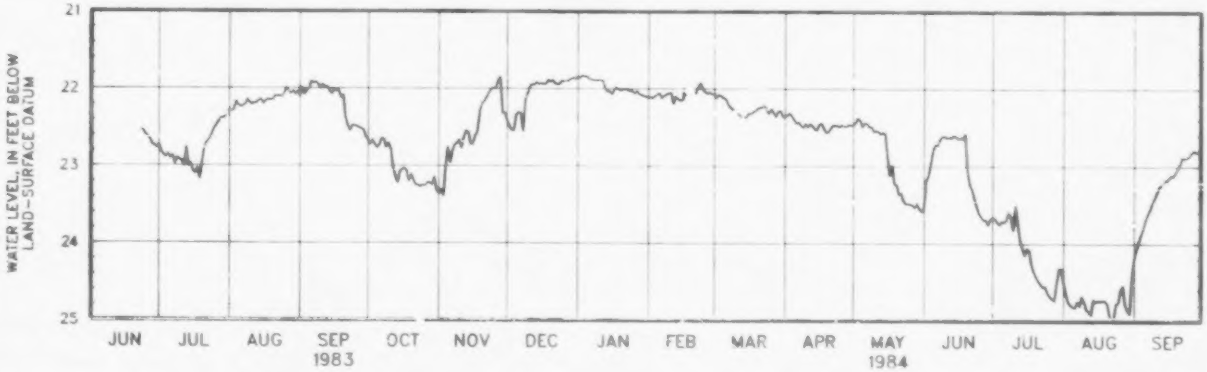
PERIOD OF RECORD.--June 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2' 80 ft (6.65 m) below land-surface datum, Jan. 3, 1984; lowest water level measured, 25.02 ft (7.63 m) below land-surface datum, Aug. 22, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.67	23.36	22.41	21.45	22.11	22.05	22.37	22.46	23.53	23.66	24.50	24.19
2	22.72	23.31	22.49	21.36	22.11	22.12	22.34	22.44	23.18	23.67	24.64	24.06
3	22.67	23.39	22.53	21.43	22.12	22.08	22.31	22.33	23.12	23.72	24.75	23.97
4	22.73	23.31	22.54	21.36	22.09	22.09	22.35	22.40	22.95	23.75	24.79	23.88
5	22.77	22.76	22.34	21.34	22.07	22.12	22.40	22.49	22.79	23.71	24.81	23.80
6	22.73	22.96	22.31	21.47	22.05	22.13	22.44	22.44	22.72	23.72	24.82	23.69
7	22.65	22.91	22.31	21.48	22.12	22.20	22.43	22.44	22.72	23.69	24.75	23.61
8	22.65	22.73	22.55	21.49	22.09	22.24	22.47	22.49	22.65	23.58	24.80	23.55
9	22.75	22.71	22.16	21.49	22.07	[illegible]	22.50	22.49	22.61	23.56	24.68	23.46
10	22.71	22.67	22.06	21.39	22.05	22.30	22.45	22.55	22.61	23.52	24.75	23.40
11	22.79	22.77	21.97	21.39	22.05	22.29	22.49	22.54	22.63	23.51	24.85	23.32
12	23.03	22.63	21.94	21.30	22.19	22.34	22.45	22.55	22.62	23.75	24.87	23.26
13	23.14	22.55	21.95	21.39	22.10	22.36	22.47	22.58	22.63	23.96	24.91	23.22
14	23.22	22.57	21.91	22.04	22.13	22.36	22.52	22.56	22.60	24.06	24.72	23.21
15	23.03	22.72	21.94	22.03	22.15	22.37	22.53	22.58	22.62	24.15	24.75	23.18
16	23.05	22.72	21.93	22.07	22.15	22.32	22.45	22.89	22.64	24.06	24.73	23.15
17	23.03	22.61	21.94	22.02	22.05	22.32	22.46	23.12	22.63	24.09	24.76	23.12
18	23.07	22.55	21.94	21.98	22.07	22.30	22.51	22.79	22.64	24.28	24.73	23.12
19	23.20	22.29	21.89	22.01	22.05	22.28	22.54	23.23	22.59	24.37	24.73	23.08
20	23.11	22.19	21.91	22.02	22.07	22.25	22.56	23.24	23.05	24.43	24.77	23.02
21	23.19	22.16	21.89	22.01	22.09	22.24	22.51	23.36	23.24	24.48	24.91	22.96
22	23.25	22.11	21.93	22.00	22.06	22.24	22.47	23.35	23.30	24.52	25.00	22.98
23	23.25	22.05	21.96	22.02	21.95	22.21	22.47	23.44	23.42	24.56	24.98	22.99
24	23.27	22.01	21.96	22.03	21.93	22.29	22.47	23.48	23.57	24.55	24.77	22.98
25	23.25	21.99	21.90	22.03	22.01	22.32	22.49	23.48	23.61	24.54	24.76	22.86
26	23.26	22.00	21.90	22.06	22.04	22.26	22.45	23.49	23.65	24.58	24.59	22.82
27	23.22	21.89	21.83	22.03	22.06	22.31	22.43	23.50	23.69	24.71	24.54	22.79
28	23.22	21.85	21.90	22.07	22.06	22.36	22.48	23.53	23.69	24.73	24.79	22.81
29	23.25	22.31	21.87	22.08	22.07	22.29	22.46	23.48	23.75	24.52	24.86	22.81
30	23.15	22.32	21.86	22.09	---	22.28	22.47	23.55	23.68	24.32	24.90	22.76
31	23.32	---	21.87	22.10	---	22.35	---	23.58	---	24.32	24.40	---
LOW	23.32	23.39	22.55	22.10	22.19	22.37	22.56	23.58	23.75	24.73	25.00	24.19
HIGH	22.65	21.85	21.86	21.33	21.93	22.05	22.31	22.33	22.59	23.51	24.40	22.76

WTR YR 1984 MEAN 22.58 LOW 25.00 HIGH 21.33



GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174243064475100. Local number, 3.

LOCATION.--Lat 17°42'43", Long 64°47'51".
   Owner: U.S. Government, Virgin Islands Government.
   Name: Golden Grove-6 (PW6).

AQUIFER.--Alluvium and marl.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 8 in (0.20 m).

DATUM.--Altitude of land-surface datum is about 40 ft (12.2 m) above mean sea level. Measuring point: Upper edge of hole at 8 in (0.20 m) casing, 4.20 ft (1.28 m) above land-surface datum.

REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 22, 1983.

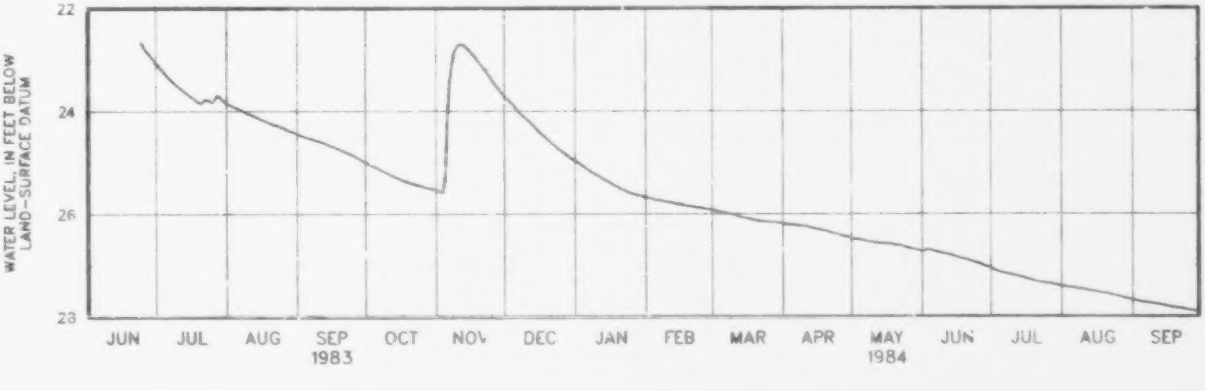
PERIOD OF RECORD.--March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.76 ft (4.50 m) below land-surface datum, March 25, 1982; lowest water level measured, 27.91 ft (8.51 m) below land-surface datum, Sept. 30, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.99	25.54	23.71	24.96	25.67	25.92	26.17	26.47	26.73	27.05	27.40	27.67
2	25.02	25.55	23.75	24.99	25.68	25.93	26.20	26.48	26.71	27.07	27.41	27.68
3	25.04	25.57	23.79	25.02	25.69	25.94	26.20	26.49	26.69	27.10	27.41	27.69
4	25.06	25.58	23.84	25.05	25.70	25.95	26.20	26.49	26.69	27.11	27.43	27.70
5	25.08	25.24	23.87	25.08	25.72	25.96	26.21	26.50	26.70	27.13	27.43	27.71
6	25.10	24.11	23.95	25.11	25.73	25.97	26.21	26.51	26.71	27.14	27.43	27.72
7	25.13	23.40	23.99	25.14	25.73	25.98	26.22	26.52	26.73	27.15	27.44	27.72
8	25.15	23.07	24.04	25.18	25.74	25.99	26.22	26.53	26.74	27.16	27.45	27.73
9	25.17	22.86	24.08	25.20	25.75	26.00	26.23	26.54	26.75	27.17	27.45	27.73
10	25.19	22.76	24.12	25.23	25.76	26.01	26.23	26.54	26.75	27.18	27.45	27.74
11	25.21	22.71	24.16	25.25	25.77	26.02	26.24	26.55	26.77	27.19	27.47	27.75
12	25.24	22.70	24.20	25.28	25.77	26.04	26.25	26.56	26.78	27.20	27.48	27.75
13	25.26	22.71	24.24	25.31	25.79	26.05	26.26	26.56	26.79	27.21	27.49	27.76
14	25.28	22.75	24.29	25.34	25.80	26.06	26.27	26.57	26.80	27.22	27.50	27.77
15	25.30	22.80	24.34	25.36	25.81	26.07	26.28	26.57	26.82	27.23	27.50	27.78
16	25.32	22.84	24.39	25.38	25.81	26.08	26.29	26.57	26.83	27.24	27.51	27.79
17	25.34	22.89	24.43	25.41	25.82	26.09	26.30	26.58	26.84	27.27	27.52	27.80
18	25.36	22.94	24.47	25.44	25.83	26.10	26.31	26.58	26.86	27.27	27.53	27.81
19	25.37	23.00	24.50	25.46	25.84	26.11	26.32	26.59	26.87	27.29	27.54	27.82
20	25.39	23.06	24.55	25.48	25.85	26.12	26.33	26.60	26.88	27.30	27.54	27.82
21	25.40	23.12	24.59	25.51	25.85	26.13	26.34	26.61	26.89	27.31	27.55	27.83
22	25.41	23.17	24.63	25.53	25.86	26.14	26.35	26.61	26.91	27.32	27.56	27.83
23	25.43	23.23	24.66	25.55	25.87	26.14	26.37	26.62	26.92	27.33	27.57	27.84
24	25.44	23.29	24.70	25.57	25.88	26.15	26.38	26.63	26.94	27.33	27.58	27.85
25	25.45	23.37	24.74	25.59	25.87	26.15	26.39	26.65	26.95	27.34	27.60	27.86
26	25.46	23.43	24.77	25.60	25.89	26.15	26.41	26.66	26.96	27.35	27.60	27.87
27	25.48	23.48	24.81	25.62	25.90	26.15	26.42	26.67	26.98	27.35	27.61	27.87
28	25.49	23.54	24.84	25.63	25.90	26.16	26.43	26.68	27.00	27.36	27.62	27.88
29	25.50	23.60	24.87	25.64	25.91	26.15	26.44	26.69	27.02	27.37	27.64	27.89
30	25.51	23.66	24.91	25.65	---	26.17	26.45	26.70	27.03	27.38	27.65	27.90
31	25.52	---	24.94	25.66	---	26.17	---	26.71	---	27.39	27.66	---
LOW	25.52	25.58	24.94	25.66	25.91	26.17	26.45	26.71	27.03	27.39	27.66	27.90
HIGH	24.99	22.70	23.71	24.96	25.68	25.92	26.17	26.47	26.69	27.05	27.40	27.67

WTR YR 1984 MEAN 25.06 LOW 27.90 HIGH 22.70



GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174245064475800. Local number, 4.
LOCATION.--Lat 17°42'45", long 64°47'58".
Owner: Virgin Islands Government.
Name: Golden Grove - 1 (PW1).
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-104 ft (0-31.70 m), perforated 64-104 ft (19.51-31.70 m). Depth 104 ft (31.70).
DATUM.--Altitude of land-surface datum is about 40 ft (12.2 m) above mean sea level. Measuring point: lower edge of 1 in. (0.02 m) pipe at pump base, 3.40 ft (1.04 m) above land-surface datum.
REMARKS.--Observation well. Lowest water level affected by pumping.
PERIOD OF RECORD.--
Water level: January 1983 to current year.
Chemical analyses: June 20, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD: Highest water level measured, 23.09 ft (7.04 m) below land-surface datum, May 18, 1983; lowest water level measured, a58.30 ft (17.77 m) below land-surface datum, September 27, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 25	a49.36	Feb. 27	26.64	May 14	28.46	July 24	a36.40
Dec. 6	26.38	Apr. 2	28.12	June 25	a58.30	Aug. 22	a32.47
Jan. 26	27.99						

174336064523200. Local number, 5.
LOCATION.--Lat 17°43'36", long 64°52'32".
Owner: Virgin Islands Government.
Name: Mahogany Road 3.
AQIFER.--Alluvium of Quaternary age and volcanic rocks of Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-104 ft (0-31.70 m), perforated 64-104 ft (19.51-31.70 m). Depth 104 ft (31.70 m).
DATUM.--Altitude of land-surface datum is 70 ft (21.3 m) above mean sea level. Measuring point: lower edge of 2 in. (0.05 m) pipe at pump base, 3.70 ft (1.13 m) above land-surface datum. Prior to December 1969, top of instrument platform, 2.57 ft (0.78 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by nearby pumpage.
PERIOD OF RECORD.--May 1964 to December 1969, discontinued. March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.24 ft (8.00 m) below land-surface datum, Dec. 16, 1969; lowest water level measured, 74.31 ft (22.6 m) below land-surface datum, Mar. 29, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 25	59.75	Jan. 26	65.69	Apr. 2	68.53	Aug. 22	69.45
Dec. 6	62.10	Feb. 27	63.32				

a Pumping.

GROUND-WATER LEVELS

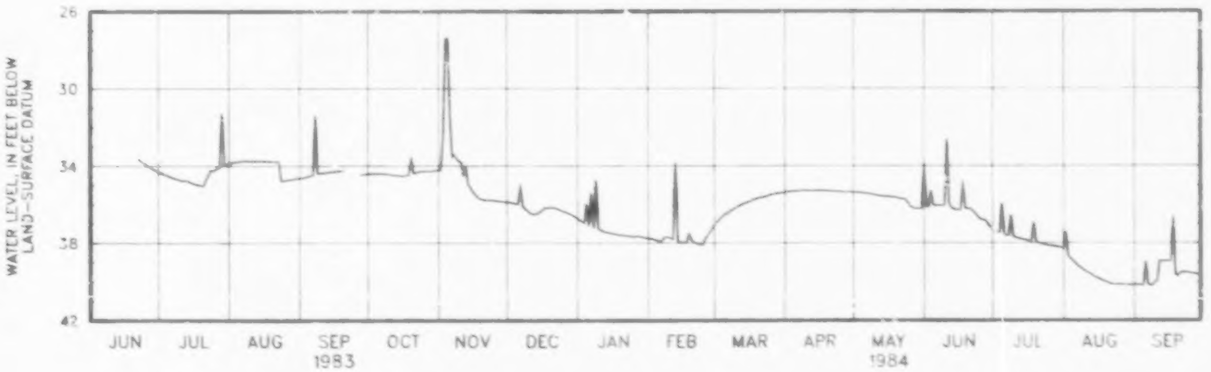
ST. CROIX, U.S. VIRGIN ISLANDS

174308064484400. Local number, 6.
LOCATION.--Lat 17°43'03", long 64°48'44".
Owner: U.S. Government, Virgin Islands Government.
Name: Adventure 28.
AQUIFER.--Alluvium of Pleistocene age and marl of Oligocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m).
DATUM.--Altitude of land-surface datum is about 80 ft (24.39 m) above mean sea level. Measuring point: Upper edge of hole at 4 in (0.10 m) casing, 2.00 ft (0.61 m) above land-surface datum. Prior June 20, 1983, top of 4 in (0.10 m) casing, 0.90 ft (0.27 m) above land-surface datum.
REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 20, 1983.
PERIOD OF RECORD.--August 1973 to March 1974, discontinued. March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.90 ft (7.59 m) below land-surface datum, Mar. 25, 1982; lowest water level measured, 40.18 ft (12.25 m) below land-surface datum, Aug. 5, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34.41	34.22	35.87	36.73	37.76	37.05	35.37	35.37	35.85	37.25	38.31	40.16
2	34.40	34.22	35.89	35.91	37.77	36.95	35.34	35.38	36.13	37.35	37.43	40.16
3	34.40	32.48	35.92	35.39	37.73	36.80	35.33	35.39	36.14	37.41	38.65	40.16
4	34.40	27.46	35.93	35.96	37.83	36.58	35.32	35.38	35.33	37.47	38.73	40.17
5	34.40	27.38	35.96	36.00	37.85	36.53	35.30	35.40	36.04	35.98	38.91	40.17
6	34.40	31.39	35.95	37.05	37.90	36.48	35.30	35.42	36.06	37.55	39.02	39.99
7	34.40	33.54	36.00	35.43	37.92	36.43	35.30	35.43	36.05	37.59	39.14	40.15
8	34.41	33.40	36.09	37.19	37.72	36.34	35.29	35.45	36.06	37.63	39.23	40.17
9	34.42	33.65	36.22	34.76	37.77	36.27	35.28	35.47	36.05	36.50	39.32	40.17
10	34.45	33.76	36.31	37.22	37.62	36.19	35.23	35.50	36.06	37.67	39.41	40.03
11	34.45	33.83	36.42	37.32	37.75	36.13	35.26	35.52	32.63	37.71	39.49	39.93
12	34.43	34.51	36.47	37.37	37.79	36.06	35.24	35.55	35.99	37.75	39.56	38.93
13	34.43	34.39	36.49	37.42	33.57	36.00	35.23	35.56	36.17	37.79	39.62	38.93
14	34.49	34.94	36.48	37.45	37.91	35.95	35.27	35.58	36.25	37.31	39.70	38.93
15	34.50	35.14	36.41	37.48	37.94	35.91	35.23	35.59	36.29	37.33	39.76	38.93
16	34.56	35.33	36.34	37.50	37.97	35.86	35.28	35.59	36.28	37.56	39.82	38.93
17	34.50	35.47	36.24	37.52	37.97	35.82	35.28	35.60	36.29	37.88	39.87	38.93
18	34.49	35.51	36.17	37.55	37.91	35.76	35.29	35.62	34.96	37.91	39.93	36.55
19	34.46	35.70	36.16	37.57	37.5	35.70	35.29	35.64	36.20	36.94	39.98	39.54
20	33.55	35.74	36.15	37.59	37.85	35.68	35.29	35.65	36.22	37.97	40.03	39.70
21	34.39	35.77	36.15	37.60	37.95	35.65	35.31	35.70	36.23	37.99	40.07	39.56
22	34.36	35.77	36.17	37.61	38.02	35.62	35.31	35.71	36.30	38.02	40.11	39.50
23	34.31	35.78	36.22	37.62	38.05	35.60	35.31	35.71	36.44	38.05	40.14	39.50
24	34.28	35.78	36.25	37.64	38.03	35.57	35.33	35.77	36.57	38.09	40.14	39.50
25	34.29	35.79	36.31	37.66	38.08	35.53	35.33	35.93	36.69	38.11	40.14	39.53
26	34.27	35.81	36.35	37.67	37.76	35.47	35.35	36.10	36.78	38.14	40.14	39.56
27	34.27	35.81	36.40	37.64	37.64	35.46	35.35	36.18	36.90	38.15	40.15	39.58
28	34.27	35.83	36.45	37.66	37.43	35.43	35.35	36.21	36.94	38.17	40.15	39.60
29	34.26	35.84	36.50	37.68	37.26	35.42	35.35	36.21	37.03	38.19	40.15	39.63
30	34.25	35.87	36.57	37.71	---	35.41	35.36	36.21	37.17	38.21	40.16	39.65
31	34.22	---	36.64	37.73	---	35.39	---	36.21	---	38.23	40.16	---
LOW	34.56	35.87	36.64	37.73	38.08	37.05	35.37	36.21	37.17	38.23	40.16	40.17
HIGH	33.55	27.38	35.03	34.76	33.57	35.39	35.23	35.37	32.63	35.98	37.43	36.55

WTR YR 1984 MEAN 36.64 LOW 40.17 HIGH 27.38



GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174525064460600. Local number, 7.
LOCATION.--Lat 17°45'25", long 64°46'06".
Owner: Virgin Islands Government.
Name: Concordia 14.
AQUIFER.--Sand and gravel.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 85 ft (25.91 m).
DATUM.--Altitude of land-surface datum is about 40 ft (12.2 m) above mean sea level. Measuring point: Top of 0.50 in (0.01 m) pipe on top of pump concrete base, 2.30 ft (0.70 m) above land-surface datum.
REMARKS.--Observation well. Water level affected by pumpage.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.73 ft (5.71 m) below land-surface datum, June 25, 1984; lowest water level measured, 41.75 ft (12.73 m) below land-surface datum, Feb. 24, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 25	a39.16	Feb. 27	24.79	May 14	25.90	July 24	a35.20
Dec. 6	a32.68	Apr. 2	23.25	June 25	18.73	Aug. 22	a38.96
Jan. 27	23.87						

174527064460100. Local number, 8.
LOCATION.--Lat 17°45'27", long 64°46'01".
Owner: Virgin Islands Government.
Name: Concordia 1 (Main pump house).
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased. Depth 82 ft (25.0 m).
DATUM.--Altitude of land-surface datum is about 40 ft (12.2 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 2.20 ft (0.67 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumpage.
PERIOD OF RECORD:
Water level: March 1982 to current year.
Chemical analyses: June 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.97 ft (6.09 m) below land-surface datum, Mar. 25, 1982; lowest water level measured, a28.39 ft (8.66 m) below land-surface datum, Dec. 8, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 25	27.82	Feb. 27	24.29	May 14	25.34	July 24	a24.70
Dec. 6	21.71	Apr. 2	24.64	June 25	a26.89	Aug. 22	26.52
Jan. 27	23.43						

a Pumping.

BEST COPY AVAILABLE

GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174532064460200. Local number, 9.
LOCATION.--Lat 17°45'32", long 64°46'03".
Owner: Virgin Islands Government.
Name: Concordia 7.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 0-81 ft (0-24.7 m). Depth 81 ft (24.7 m).
DATUM.--Altitude of land-surface datum is 35 ft (10.7 m) above mean sea level. Measuring point: Hole in pump base, 2.20 ft (0.67 m) above land-surface datum. Previous to Mar. 25, 1982, hole in pump base 2.50 ft (0.76 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD:
Water levels: June 1962 to October 1968, discontinued. March 1982 to current year.
Chemical analysis: October 1964 to October 1967, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.75 ft (0.53 m) below land-surface datum, May 11, 1966; lowest water level measured, 57.40 ft (17.5 m) below land-surface datum, Mar. 5, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 25	a43.37	Feb. 27	10.26	May 14	11.35	July 24	a21.82
Dec. 6	a27.79	Apr. 2	10.96	June 25	a28.34	Aug. 22	a20.48
Jan. 27							

174329064454700. Local number, 10.
LOCATION.--Lat 17°43'29", long 64°45'47".
Owner: Virgin Islands Government.
Name: Barren Spot 5 (PWD-5).
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 0-130 ft (0-39.63 m), perforated 71-130 ft (21.64-39.63 m). Depth 130 ft (39.63 m).
DATUM.--Altitude of land-surface datum is about 75 ft (22.86 m) above mean sea level. Measuring point: Hole on top of pump base, 2.00 ft (0.61 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD:
Water level: March 1982 to current year.
Chemical analyses: June 22, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 61.75 ft (18.86 m) below land-surface datum, Mar. 26, 1982; lowest water level measured, a75.52 ft (23.02 m) below land-surface datum, Sept. 8, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 25	a70.50	Feb. 27	64.19	May 14	64.55	July 24	69.73
Dec. 6	64.29	Apr. 2	65.64	June 25	a68.93	Aug. 22	a73.77
Jan. 27	64.35						

a Pumping.

ST. THOMAS, U.S. VIRGIN ISLANDS

182050064580400. Local number, 1.
LOCATION.--Lat 18°20'50", long 64°58'04".
   Owner: U.S. Government, Virgin Islands Government.
   Name: USGS-8 (Family well - Thatch Farm).
AQUIFER.--Volcanic rocks of Cretaceous age.
WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-25 ft (0-7.62 m), openhole 25-80 ft (7.62-24.4 m). Depth 80 ft (24.4 m).
DATUM.--Altitude of land-surface datum is 80 ft (24.4 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 2.50 ft (0.76 m) above land-surface datum. Prior to Mar. 23, 1982, top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum.
REMARKS.--Non potable public-water supply and observation well.
PERIOD OF RECORD:
   Water levels: October 1963 to August 1969, discontinued. March 1982 to current year.
   Chemical analyses: December 1963, discontinued. June 30, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.29 ft (1.61 m) below land-surface datum, May 6, 1983; lowest water level measured, 56.44 ft (17.21 m) below land-surface datum, Aug. 24, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 26	25.36	Feb. 28	a32.73	May 23	a45.92	July 26	56.29
Nov. 30	26.07	Apr. 4	a43.45	June 29	a44.24	Aug. 24	56.44
Jan. 23	30.11						

182138064541[illegible]. Local number, 2.
LOCATION.--Lat 18°21'38", long 64°54'31".
   Owner: Mahogany Run Resort.
   Name: Mahogany [illegible].
AQUIFER.--Fractured rocks.
WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 145 ft (44.2 m).
DATUM.--Altitude of land-surface datum is 120 ft (36.6 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.20 ft (0.36 m) below land-surface datum.
REMARKS.--Potable water supply. Observation well. Water level affected by nearby pumping well.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, [illegible] ft ([illegible] m) below land-surface datum, July [illegible], 1983; lowest water level measured, [illegible] ft ([illegible] m) below land-surface datum, July 26, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 26	30.51	Feb. 28	47.26	May 23	64.76	July 26	[illegible]
Nov. 30	27.75	Apr. 4	51.79	June 29	64.50	Aug. 24	[illegible]
Jan. 25	[illegible]						

[illegible]. Local number, 3.
LOCATION.--Lat 18°21'[illegible]", long 64°[illegible]'[illegible]".
   Owner: Mahogany Run Resort.
   Name: Mahogany [illegible].
AQUIFER.--[illegible] rocks.
WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth [illegible] ft ([illegible] m).
DATUM.--Altitude of land-surface datum is [illegible] ft ([illegible] m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, [illegible] ft ([illegible] m) below land-surface datum.
REMARKS.--Water level affected by nearby pumping well.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, [illegible] ft ([illegible] m) below land-surface datum, Aug. [illegible], 1983; lowest water level measured, a[illegible] ft ([illegible] m) below land-surface datum, July [illegible], 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 26	[illegible]	Feb. 28	[illegible]	May 23	[illegible]	July 26	[illegible]
Nov. 30	[illegible]	Apr. 4	a[illegible]	June 29	[illegible]	Aug. 24	[illegible]
Jan. 25	[illegible]						

a Pumping.

ST. THOMAS, U.S. VIRGIN ISLANDS

182136064541900. Local number, 4.
LOCATION.--lat 18°21'36", long 64°54'19".
Owner: Mahogany Run Resort
Name: Mahogany 17.
AQUIFER.--Fractured rock.
WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 145 ft (44.21 m).
DATUM.--Altitude of land-surface datum is 140 ft (42.7 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing at land-surface datum.
REMARKS.--Potable water supply. Water level affected by nearby pumping.
PERIOD OF RECORD.- March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.60 ft (7.80 m) below land-surface datum, July 20, 1983; lowest water level measured, [a]60.40 ft (18.41 m) below land-surface datum, Sept. 10, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 26	36.70	Feb. 28	40.57	May 23	44.12	July 26	44.05
Nov. 30	33.80	Apr. 4	42.07	June 29	43.48	Aug. 24	44.00
Jan. 25	38.22						

182029064535200. Local number, 5.
LOCATION.--Lat 18°20'29", long 64°53'52".
Owner: Virgin Islands Government, V.I. Housing Authority.
Name: Donoe 3.
AQUIFER.--Volcanic rock undifferentiated. Fracture at 165 ft (50.3 m), from drilling log.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 0-20 ft (0-6.10 m), openhole 20-400 ft (6.10-122 m). Dept 400 ft (122 m).
DATUM.--Altitude of land-surface datum is about 235 ft (71.6 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 2.30 ft (0.70 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD:
Water levels: March 1982 to current year.
Chemical analyses: July 1 1983 to current year.
EXTREMES FOR PERIOD . RECORD.--Highest water level measured, 71.44 ft (21.78 m) below land-surface datum, July 1, 1983; lowest water level measured, 88.37 ft (26.94 m) below land-surface datum, July 21, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 28	83.38	Feb. 28	78.04	May 23	85.65	July 26	86.63
Nov. 29	82.50	Apr. 4	81.58	June 29	85.04	Aug. 24	86.88
Jan. 25	78.10						

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[a] Pumping.

GROUND-WATER LEVELS

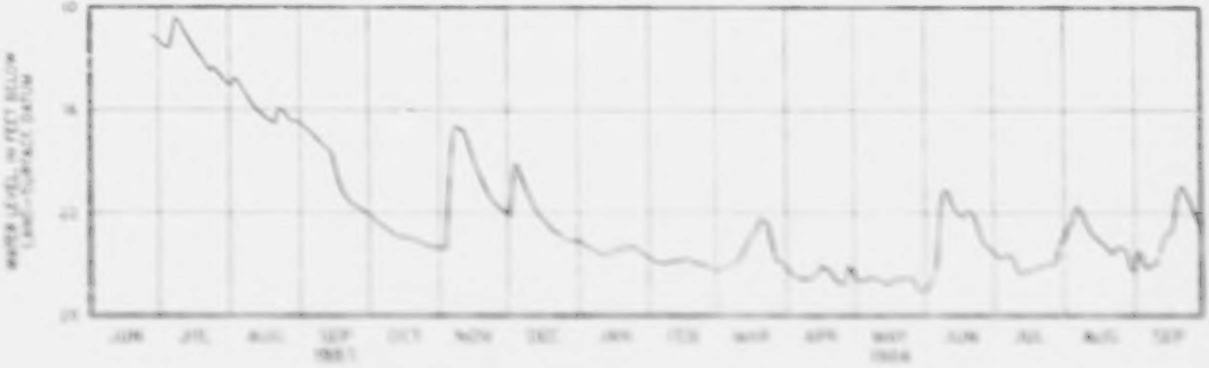
ST. THOMAS, U.S. VIRGIN ISLANDS

182038064550300. Local number, 6.
LOCATION.--Lat 18°20'38", long 64°55'03".
Owner: U.S. Government, Virgin Islands Government.
Name: Grade School 3.
AQUIFER.--Volcanic breccia.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 70 ft (21.33 m).
DATUM.--Altitude of land-surface datum is 60 ft (18.3 m) above mean sea level. Measuring point: Top of 0.5 in (0.01 m) hole at 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum. Prior to June 27, 1983, top of 6 in (0.15 m) casing, 2.90 ft (0.88 m) above land-surface datum.
REMARKS.--Observation well. Automatic Digital Recorder (ADR) was installed on June 27, 1983.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.56 ft (3.22 m) below land-surface datum, July 9, 1983; lowest water level measured, 35.38 ft (10.79 m) below land-surface datum, July 21, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.03	23.97	22.05	23.55	24.51	25.31	25.08	25.62	26.49	24.25	23.45	25.22
2	22.13	24.33	22.16	23.59	24.66	25.30	25.24	25.88	26.37	24.44	23.17	24.36
3	22.23	24.38	20.97	23.79	24.79	25.28	25.53	25.30	26.13	24.50	22.71	24.23
4	22.42	24.00	19.58	23.90	24.87	25.24	25.64	25.39	25.96	24.53	22.67	24.57
5	22.54	21.17	19.09	24.00	24.91	25.13	25.68	25.92	25.75	24.62	22.20	25.01
6	22.64	18.82	19.43	24.02	24.91	25.12	25.74	25.93	24.97	24.58	21.74	25.26
7	22.73	17.53	19.85	24.37	24.92	25.07	25.79	25.83	23.09	24.51	21.59	25.16
8	22.82	16.91	20.24	24.15	24.94	25.04	25.57	25.74	21.50	24.45	21.80	25.05
9	22.91	16.79	20.55	24.25	24.95	24.97	25.93	25.77	20.88	24.56	22.12	25.00
10	23.01	17.15	20.84	24.35	24.83	24.85	25.84	25.34	20.65	24.57	22.47	24.97
11	23.11	17.38	21.15	24.41	24.79	24.70	25.87	25.90	20.69	25.25	22.71	24.72
12	23.21	17.27	21.45	24.43	24.80	24.50	25.81	25.93	21.11	25.52	22.95	24.27
13	23.30	17.56	21.72	24.48	24.81	24.34	25.73	25.96	21.35	25.58	23.19	23.78
14	23.35	17.97	21.91	24.44	24.79	24.24	25.55	26.06	21.77	25.51	23.34	23.48
15	23.41	18.44	22.12	24.34	24.77	23.76	25.42	26.18	21.92	25.43	23.49	23.35
16	23.42	18.84	22.29	24.28	24.77	23.53	25.26	26.15	22.13	25.37	23.59	23.12
17	23.42	19.20	22.41	24.20	24.74	23.32	25.11	26.26	22.23	25.34	23.65	23.16
18	23.44	19.53	22.53	24.13	24.67	23.12	25.19	25.97	22.21	25.32	23.80	22.58
19	23.48	19.84	22.70	24.39	24.82	22.97	25.11	25.29	22.04	25.30	23.93	21.49
20	23.53	20.13	22.83	24.07	24.87	22.70	25.35	25.37	21.89	25.26	24.05	20.81
21	23.57	20.46	23.04	24.25	24.90	22.40	25.51	25.85	21.92	25.18	24.23	20.50
22	23.59	20.76	23.07	23.99	24.93	22.33	25.77	25.55	22.05	25.11	24.36	20.47
23	23.45	20.95	23.15	23.92	24.97	22.44	25.97	25.36	22.34	25.04	24.25	20.72
24	23.72	21.17	23.22	23.93	25.01	22.70	26.05	25.30	22.75	25.00	24.07	21.00
25	23.75	21.34	23.31	23.99	25.04	23.79	26.09	25.79	23.28	24.99	24.01	21.30
26	23.84	21.47	23.49	24.07	25.01	23.93	26.12	25.78	23.65	25.04	24.04	21.51
27	23.92	21.52	23.60	24.15	25.15	24.41	26.03	25.76	23.83	24.99	24.08	21.89
28	23.97	21.71	23.53	24.24	25.22	24.75	25.52	26.27	23.96	24.39	24.19	22.25
29	24.01	21.81	23.60	24.32	25.29	24.88	25.12	26.53	24.07	24.49	24.53	22.53
30	24.02	21.90	23.64	24.45	---	24.90	25.39	26.63	24.18	23.88	25.16	22.71
31	23.97	---	23.65	24.35	---	24.96	---	26.61	---	23.58	25.37	---
LOW	24.02	24.08	23.65	24.55	25.29	25.31	26.12	26.53	26.49	25.58	25.37	25.26
HIGH	22.03	16.91	19.09	23.55	24.51	22.33	25.08	25.68	20.65	23.58	21.59	20.47

WTR YR 1984 MEAN 23.73 LOW 26.49 HIGH 16.91



ST. JOHN, U.S. VIRGIN ISLANDS

182010064472600. Local number, 1.
LOCATION.--Lat 18°20'10", long 64°47'26".
Owner: U.S. Government, National Park Services.
Name: NPS-2 (Cruz Bay).
AQUIFER: Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), 4 in (0.10 m), cased, 0-20 ft (0-6.10 m), open hole 20-99 ft (6.10-30.2 m). Depth 99 ft (30.2 m).
DATUM: Altitude of land-surface datum is 60 ft (18.3 m) above mean sea level. Measuring point: Top of 4 in (0.10 m) casing, 4.10 ft (1.25 m) above old land-surface datum after 1.4 ft (0.43 m) land fill and 2.7 ft (0.82 m) casing extension occurred. Prior to June 29, 1983, top of 4 in (0.10 m) casing, 1.4 ft (0.43 m) above land-surface datum.
REMARKS.--Observation well. Lowest water level affected by pumping nearby well.
PERIOD OF RECORD:
Water levels: May 1964, discontinued. June 30, 1983 to current year.
Chemical analyses: May 1964, discontinued. June 30, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.39 ft (1.64 m) below land-surface datum, Aug. 24, 1983; lowest water level measured, 42.56 ft (12.98 m) below land-surface datum, Aug. 30, 1967.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 27	30.69	Feb. 29	27.07	May 15	31.50	July 25	33.24
Nov. 30	25.99	Apr. 3	27.42	June 27	27.74	Aug. 25	17.53
Jan. 24	23.74						

182109064460300. Local number, 2.
LOCATION.--Lat 18°21'39", long 64°46'03".
Owner: U.S. Government, National Park Service.
Name: NPS-5 (Trunk Bay).
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 0-12 ft (0-3.66 m), open hole 12-60 ft (3.66-18.3 m). Depth 60 ft (18.3 m).
DATUM.--Altitude of land-surface datum is 60 ft (18.3 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 0.70 ft (0.21 m) above land-surface datum. Prior to Mar. 24, 1982 top of 6 in (0.15 m) casing, 1.00 ft (0.30 m) above land-surface datum.
REMARKS.--Active water supply well for recreation facilities at Trunk Bay.
PERIOD OF RECORD:
Water levels: August 1964 to December 1969, discontinued. March 1982 to current year.
Chemical analyses: July 1964 to June 1969, discontinued. June 30, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.76 ft (5.11 m) below land-surface datum, June 3, 1969; lowest water level measured, a37.29 ft (11.37 m) below land-surface datum, Nov. 27, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 27	28.34	Feb. 29	30.96	May 15	a46.48	July 25	a48.34
Nov. 30	26.76	Apr. 3	37.84	June 27	a47.76	Aug. 25	35.75
Jan. 24	35.27						

a Pumping.

GROUND-WATER LEVELS

ST. JOHN, U.S. VIRGIN ISLANDS

182116064451000. Local number, 3.

LOCATION.--Lat 18°21'16", long 64°45'10".

Owner: U.S. Government, National Park Service.

Name: NPS-6 (Cinnamon Bay).

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6-in (0.15 m), cased 0-51 ft (0-15.55 m), open hole 51-70 ft (15.55-21.34 m). Depth 70 ft (21.34 m).

DATUM.--Altitude of land-surface datum is 60 ft (18.3 m) above mean sea level. Measuring point: Hole on 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum. Prior to June 29, 1983, top of 6 in (0.15 m) casing at land-surface datum.

REMARKS.--Abandoned as production well. Automatic Digital Recorder (ADR) installed on June 29, 1983.

PERIOD OF RECORD:

Water levels: August 1964 to December 1969, discontinued. March 1982 to current year.

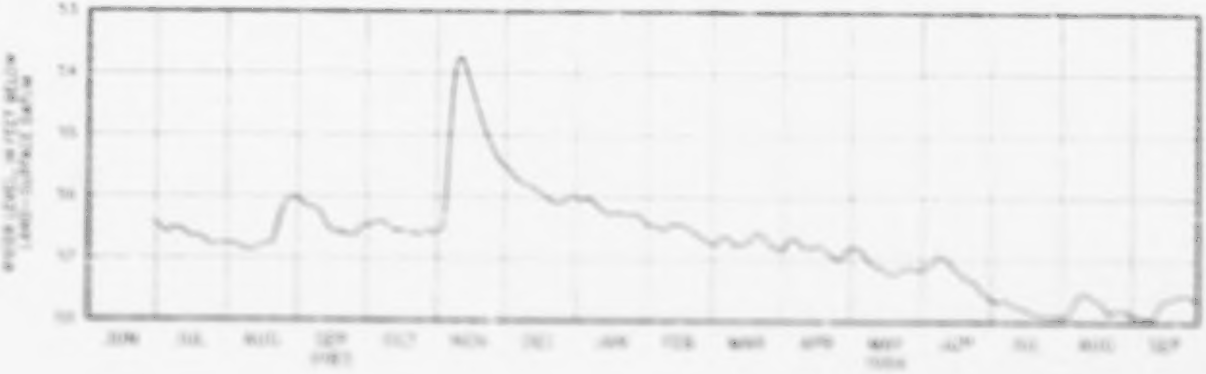
Chemical analyses: August 1964 to June 1969, discontinued. June 29, 1983.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 41.12 ft (12.54 m) below land-surface datum, Aug. 15, 1969; lowest water level measured, 63.15 ft (19.25 m) below land-surface datum, July 1, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56.45	55.55	55.47	55.39	56.43	56.75	56.64	56.80	57.14	57.61	57.92	57.88
2	56.45	55.54	55.54	55.37	56.44	56.76	56.73	56.79	57.13	57.64	57.91	57.89
3	56.45	55.53	55.57	55.35	56.45	56.77	56.71	56.79	57.11	57.68	57.90	57.91
4	56.44	55.43	55.62	55.35	56.46	56.67	56.57	56.81	57.09	57.67	57.89	57.91
5	56.41	55.24	55.67	55.34	56.45	56.64	56.65	56.84	57.05	57.67	57.81	57.93
6	56.42	55.16	55.70	55.32	56.47	56.53	56.63	56.83	57.03	57.65	57.73	57.93
7	56.42	54.73	55.74	55.31	56.52	56.57	56.67	56.95	56.75	57.63	57.65	57.97
8	56.42	54.35	55.76	55.29	56.52	56.55	56.71	56.99	56.81	57.66	57.60	57.93
9	56.47	53.74	55.79	55.39	56.53	56.59	56.77	57.02	56.95	57.68	57.56	57.95
10	56.44	53.79	55.81	55.37	56.49	56.74	56.80	57.06	56.95	57.71	57.54	57.94
11	56.47	53.76	55.83	55.15	56.46	56.76	56.81	57.14	56.96	57.74	57.54	57.88
12	56.43	53.78	55.83	55.15	56.44	56.78	56.79	57.10	57.07	57.74	57.54	57.79
13	56.53	53.94	55.86	55.21	56.47	56.76	56.81	57.11	57.06	57.75	57.56	57.72
14	56.35	53.97	55.87	55.24	56.47	56.74	56.79	57.11	57.09	57.77	57.59	57.68
15	56.55	54.29	55.83	55.28	56.47	56.73	56.77	57.15	57.13	57.78	57.62	57.65
16	56.55	54.22	55.91	55.27	56.44	56.73	56.77	57.19	57.15	57.78	57.64	57.56
17	56.45	54.37	55.94	55.26	56.45	56.71	56.77	57.20	57.17	57.81	57.65	57.63
18	56.57	54.45	55.95	55.35	56.47	56.55	56.79	57.22	57.24	57.83	57.63	57.51
19	56.53	54.58	55.99	55.24	56.49	56.42	56.83	57.24	57.25	57.86	57.71	57.60
20	56.55	54.69	56.02	55.25	56.51	56.58	56.85	57.25	57.29	57.86	57.75	57.60
21	56.57	54.80	56.03	55.26	56.53	56.57	56.89	57.21	57.32	57.89	57.81	57.58
22	56.59	54.92	56.03	55.27	56.55	56.47	56.92	57.17	57.33	57.88	57.87	57.57
23	56.62	55.31	56.09	55.25	56.58	56.51	56.93	57.15	57.36	57.93	57.85	57.56
24	56.61	55.09	56.09	55.28	56.62	56.65	56.97	57.16	57.35	57.98	57.81	57.56
25	56.59	55.13	56.09	55.25	56.64	56.70	56.93	57.14	57.42	57.99	57.79	57.55
26	56.55	55.26	56.24	55.27	56.67	56.74	56.98	57.14	57.45	57.90	57.80	57.57
27	56.53	55.33	56.07	55.28	56.69	56.77	56.93	57.16	57.51	57.91	57.81	57.56
28	56.57	55.39	56.01	55.27	56.72	56.80	56.91	57.14	57.56	57.90	57.82	57.51
29	56.57	55.44	56.23	55.31	56.74	56.92	56.83	57.14	57.57	57.91	57.83	57.53
30	56.59	55.47	55.94	55.34	---	56.87	56.61	57.15	57.59	57.91	57.83	57.53
31	56.57	---	55.94	55.37	---	56.96	---	57.17	---	57.91	57.85	---
LOW	56.61	55.55	56.24	55.39	56.74	56.96	56.98	57.25	57.59	57.99	57.92	57.97
HIGH	56.40	53.76	55.47	55.39	56.43	56.57	56.53	56.79	56.95	57.61	57.54	57.56

WTR YR 1984 MEAN 56.78 LOW 57.99 HIGH 53.76



ST. JOHN, U.S. VIRGIN ISLANDS

181951064422100. Local number, 4.
LOCATION.--Lat 18°19'51", long 64°42'21".
Owner: U.S. Government, Virgin Islands Government.
Name: USGS-15 (Calabash Boom).
AQUIFER.--Volcanic rocks of Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water-table well diameter 6 in (0.15 m), cased 0-61 ft (0-18.6 m), slotted 40-61 (12.2-18.6 m). Depth 62 ft (18.9 m).
DATUM: Altitude of land-surface datum is 50 ft (15.2 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.10 ft (0.34 m) above land-surface datum. Previous to March 1982, top of 6 in. (0.15 m) casing, 1.40 ft (0.43 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD:
Water levels: September 1964 to December 1967, discontinued. March 1982 to current year.
Chemical analyses: September 22, 1964, discontinued. June 30, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured 39.55 ft (12.06 m) below land-surface datum, May 25, 1982; lowest water level measured, 44.55 ft (13.58 m) below land-surface datum, Mar. 22, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level
Jan. 24	41.79	June 27	43.08

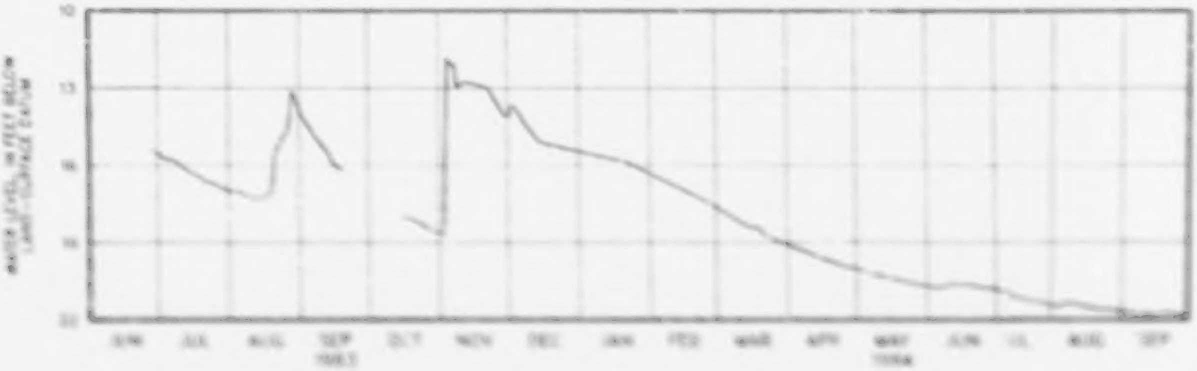
GROUND-WATER LEVELS

ST. JOHN, U.S. VIRGIN ISLANDS

182042064454500. Local number, 5.
LOCATION.--Lat 18°20'42", long 64°45'45".
Owner: Virgin Islands Government.
Name: DPW-6.
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 70 ft (21.3 m).
DATUM.--Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.60 ft (0.49 m) above land-surface datum. Prior to June 28, 1983, top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum.
REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 28, 1983.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.34 ft (3.46 m) below land-surface datum, Apr. 27, 1983; lowest water level measured, 21.88 ft (6.67 m) below land-surface datum, Sept. 30, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	18.57	14.07	15.45	16.31	17.61	19.07	20.03	20.69	20.81	21.42	21.67
2	---	18.56	14.01	15.47	16.35	17.68	19.11	20.07	20.71	20.84	21.43	21.69
3	---	18.71	13.68	15.49	16.40	17.74	19.14	20.08	20.71	20.86	21.45	21.70
4	---	14.56	13.72	15.51	16.44	17.78	19.17	20.10	20.73	20.87	21.47	21.72
5	---	11.94	13.63	15.53	16.48	17.82	19.21	20.13	20.74	20.89	21.47	21.73
6	---	12.06	13.97	15.55	16.53	17.87	19.25	20.15	20.74	20.90	21.40	21.72
7	---	12.05	14.11	15.58	16.57	17.95	19.28	20.18	20.75	20.92	21.36	21.75
8	---	12.06	14.26	15.60	16.61	18.01	19.31	20.21	20.72	20.94	21.34	21.76
9	---	12.22	14.40	15.62	16.66	18.05	19.34	20.23	20.69	20.96	21.34	21.77
10	---	12.57	14.54	15.64	16.70	18.11	19.37	20.26	20.65	20.97	21.35	21.77
11	---	12.33	14.62	15.65	16.74	18.17	19.41	20.28	20.64	20.99	21.37	21.75
12	---	12.41	14.74	15.67	16.79	18.22	19.45	20.29	20.63	21.01	21.39	21.79
13	---	12.77	14.83	15.69	16.83	18.28	19.49	20.31	20.63	21.04	21.42	21.79
14	---	12.79	14.97	15.71	16.88	18.32	19.52	20.34	20.63	21.06	21.44	21.79
15	---	12.31	15.06	15.73	16.91	18.35	19.57	20.36	20.63	21.09	21.47	21.79
16	18.02	12.41	15.12	15.76	16.95	18.39	19.61	20.33	20.63	21.12	21.48	21.80
17	18.02	12.53	15.14	15.78	17.01	18.40	19.64	20.38	20.63	21.13	21.50	21.80
18	18.03	12.57	15.17	15.80	17.05	18.42	19.67	20.41	20.63	21.15	21.51	21.80
19	18.03	12.31	15.19	15.82	17.09	18.44	19.69	20.45	20.63	21.17	21.53	21.75
20	18.12	12.31	15.21	15.84	17.14	18.45	19.72	20.47	20.64	21.19	21.55	21.76
21	18.17	12.94	15.23	15.86	17.18	18.53	19.75	20.49	20.65	21.21	21.57	21.73
22	18.17	12.99	15.25	15.88	17.22	18.59	19.79	20.51	20.68	21.23	21.59	21.73
23	18.23	13.07	15.27	15.90	17.27	18.73	19.82	20.53	20.70	21.26	21.59	21.74
24	18.25	13.19	15.29	15.96	17.31	18.78	19.87	20.55	20.73	21.28	21.60	21.77
25	18.34	13.37	15.31	16.00	17.36	18.81	19.89	20.57	20.76	21.30	21.61	21.80
26	18.33	13.49	15.33	16.03	17.40	18.86	19.91	20.59	20.77	21.10	21.61	21.82
27	18.43	13.64	15.35	16.09	17.44	18.90	19.93	20.61	20.79	21.12	21.61	21.82
28	18.46	13.90	15.37	16.13	17.49	18.93	19.95	20.63	20.77	21.17	21.62	21.84
29	18.51	13.95	15.39	16.18	17.53	18.96	19.98	20.65	20.77	21.35	21.64	21.85
30	18.56	14.37	15.41	16.22	---	19.01	20.02	20.66	20.80	21.37	21.65	21.88
31	18.58	---	15.43	16.27	---	19.03	---	20.68	---	21.41	21.66	---
LOW	---	18.71	15.43	16.27	17.53	19.03	20.02	20.68	20.80	21.41	21.66	21.88
HIGH	---	11.94	13.63	15.45	16.31	17.61	19.07	20.03	20.63	20.81	21.34	21.67



GROUND-WATER LEVELS

ST. JOHN, U.S. VIRGIN ISLANDS

182044064454600. Local number, 6.
LOCATION.--Lat 18°20'44", long 64°45'46".
Owner: Virgin Islands Government.
Name: DPW-5.
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 145 ft (44.2 m).
DATUM.--Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.40 ft (0.43 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD:
Water levels: September 1982 to current year.
Chemical analyses: June 30, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 36.71 ft (11.19 m) below land-surface datum, Sept. 9, 1983; lowest water level measured, a104.96 ft (32.0 m) below land-surface datum, May 19, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 27	a87.34	Feb. 29	69.70	May 15	43.48	July 25	44.29
Nov. 30	45.59	Apr. 3	42.82	June 27	43.69	Aug. 25	45.90
Jan. 24	41.76						

182044064454800. Local number, 7.
LOCATION.--Lat 18°20'44, long 64°45'48".
Owner: Virgin Islands Government.
Name: DPW-4
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 60 ft (18.3 m).
DATUM: Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 0.60 ft (0.18 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.36 ft (7.73 m) below land-surface datum, Sept. 9, 1982; lowest water level measured, 49.10 ft (14.97 m) below land-surface datum, Oct. 26, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 27	43.87	Feb. 29	45.44	May 15	32.34	July 25	33.15
Nov. 30	34.80	Apr. 3	32.08	June 27	32.59	Aug. 25	34.57
Jan. 24	33.15						

182044064454900. Local number, 8.
LOCATION.--Lat 18°20'44", long 64°45'49".
Owner: Virgin Islands Government.
Name: DPW-3.
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 110 ft (33.5 m).
DATUM.--Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.80 ft (0.55 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.93 ft (6.38 m) below land-surface datum, Sept. 9, 1982; lowest water level measured, [illegible] ft ([illegible] m) below land-surface datum, [illegible], 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 27	[illegible]	Feb. 29	[illegible]	May 15	[illegible]	July 25	[illegible]
Nov. 30	[illegible]	Apr. 3	[illegible]	June 27	[illegible]	Aug. 25	[illegible]
Jan. 24	[illegible]						

a Pumping.

ST. JOHN, U.S. VIRGIN ISLANDS

182044064455000. Local number, 9.
LOCATION.--Lat 18°20'44", long 64°45'50".
Owner: Virgin Islands Government.
Name: DPW-2.
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 65 ft (19.8 m).
DATUM.--Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.84 ft (10.01 m) below land-surface datum, Sept. 9, 1982; lowest water level measured, 52.44 ft (15.99 m) below land-surface datum, May 19, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 27	51.03	Feb. 29	37.72	May 15	38.94	July 25	39.21
Nov. 30	39.39	Apr. 3	41.29	June 27	38.56	Aug. 25	40.30
Jan. 24	37.33						

182044064455200. Local number, 10.
LOCATION.--Lat 18°20'44", long 64°45'52".
Owner: Virgin Islands Government.
Name: DPW-1.
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 60 ft (18.3 m).
DATUM.--Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.03 ft (9.76 m) below land-surface datum, Sept. 9, 1983; lowest water level measured, a37.60 ft (a11.46 m) below land-surface datum, Dec. 9, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 27	36.59	Feb. 29	33.69	May 15	35.10	July 25	35.27
Nov. 30	35.62	Apr. 3	36.83	June 27	34.90	Aug. 25	36.18
Jan. 24	33.93						

a Pumping.

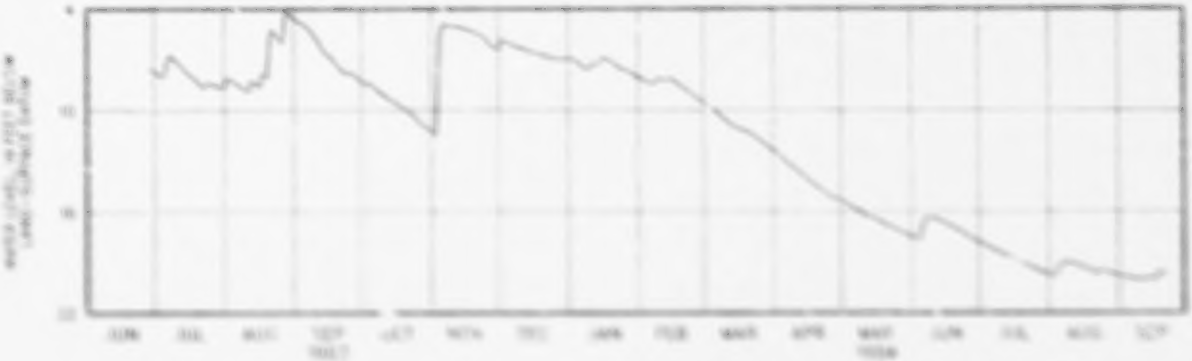
GROUND-WATER LEVELS

ST. JOHN, U.S. VIRGIN ISLANDS

181 56064464500. Local number, 11.
LOCATION.--Lat 18°19'56", long 64°46'45".
Owner: Virgin Islands Government.
Name: Guinea Gut Well.
AQUIFER.--Louisenhoj Formation (Donnelly, 1959).
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 85 ft (25.9 m).
DATUM.--Altitude of land-surface datum is about 280 ft (85.36 m) above mean sea level. Measuring point: Bottom of 0.5 in (0.01 m) hole at 6 in (0.15 m) casing, 1.50 ft (0.46 m) above land-surface datum. Prior to June 28, 1983, top of 6 in (0.15 m) casing, 1.80 ft (0.55 m) above land-surface datum.
REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 28, 1983.
PERIOD OF RECORD:
Water levels: March 1982 to current year.
Chemical analyses: June 30, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.34 ft (1.02 m) below land-surface datum, May 25, 1982; lowest water level measured, 20.05 ft (6.11 m) below land-surface datum, Sept. 11, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.31	11.27	5.39	6.92	8.03	9.52	12.35	15.34	17.45	17.79	19.72	19.77
2	8.47	11.34	6.03	6.95	8.09	9.62	12.45	15.40	17.51	17.86	19.75	19.81
3	8.52	11.45	5.80	7.31	8.17	9.70	12.62	15.47	17.56	17.92	19.78	19.85
4	8.31	8.10	5.92	7.33	8.23	9.77	12.71	15.55	17.60	17.98	19.70	19.85
5	8.43	5.61	6.01	7.10	8.36	9.88	12.83	15.63	17.56	18.05	19.44	19.91
6	8.57	5.08	6.05	7.26	8.35	9.99	12.95	15.70	16.98	18.12	19.25	19.92
7	8.68	4.96	6.09	7.39	8.35	10.13	13.07	15.76	16.55	18.19	19.13	19.96
8	8.79	4.98	6.15	7.46	8.31	10.25	13.19	15.87	16.42	18.26	19.06	19.99
9	8.91	4.95	6.24	7.55	8.33	10.37	13.27	15.95	16.36	18.33	19.03	20.01
10	9.02	5.01	6.20	7.50	8.11	10.48	13.33	16.04	16.36	18.40	19.02	20.00
11	9.07	5.03	6.31	7.39	8.15	10.59	13.49	16.13	16.37	18.47	19.04	20.01
12	9.21	5.06	6.39	7.26	8.22	10.69	13.61	16.21	16.42	18.51	19.07	20.02
13	9.30	5.35	6.47	7.31	8.22	10.81	13.72	16.27	16.47	18.57	19.11	19.96
14	9.39	5.39	6.50	7.33	8.22	10.91	13.82	16.34	16.53	18.63	19.17	19.97
15	9.49	5.15	6.56	7.19	8.19	10.99	13.93	16.33	16.60	18.69	19.21	19.93
16	9.52	5.19	6.56	6.45	8.12	11.07	14.05	16.39	16.67	18.75	19.26	19.95
17	9.60	5.22	6.60	5.99	8.23	11.10	14.17	15.67	16.73	18.81	19.31	19.90
18	9.74	5.27	6.55	6.96	8.34	11.15	14.27	16.55	16.80	18.88	19.38	19.83
19	9.77	5.36	6.62	7.32	8.46	11.25	14.39	16.62	16.87	18.94	19.44	19.80
20	9.87	5.36	6.69	7.12	8.56	11.19	14.47	16.70	16.94	19.00	19.52	19.81
21	10.00	5.44	6.75	7.25	8.61	11.27	14.57	16.77	17.00	19.06	19.60	19.80
22	10.04	5.49	6.79	7.29	8.74	11.37	14.66	16.85	17.07	19.12	19.67	19.84
23	10.20	5.53	6.81	7.41	8.86	11.48	14.75	16.91	17.15	19.18	19.55	---
24	10.35	5.60	6.85	7.49	8.93	11.58	14.88	16.97	17.23	19.24	19.61	---
25	10.45	5.75	6.92	7.36	9.00	11.66	14.95	17.03	17.33	19.29	19.57	---
26	10.57	5.88	7.00	7.62	9.11	11.77	15.07	17.09	17.43	19.42	19.51	---
27	10.73	6.06	6.91	7.66	9.24	11.95	15.13	17.14	17.55	19.46	19.55	---
28	10.86	6.21	6.91	7.71	9.35	11.95	15.16	17.20	17.62	19.52	19.61	---
29	10.96	6.31	7.00	7.78	9.43	12.06	15.23	17.27	17.63	19.59	19.66	---
30	11.00	6.33	6.98	7.87	---	12.16	15.27	17.33	17.73	19.63	19.72	---
31	11.11	---	6.96	7.98	---	12.25	---	17.38	---	19.66	19.73	---
LOW	11.11	11.45	7.00	7.98	9.43	12.25	15.27	17.38	17.73	19.66	19.78	---
HIGH	8.31	4.96	5.80	6.45	8.03	9.52	12.35	15.34	16.36	17.79	19.02	---



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QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

STATION NUMBER	TOTAL DEPTH OF WELL (FT)	DATE OF SAMPLE	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	ALKA-LINITY, TOTAL AS CaCO3 (MG/L)	CHLO-RIDE, TOTAL (MG/L)
		SAINT CROIX, U.S. VIRGIN ISLANDS					
174225064471900	--	01-26-84	5090	7.5	27.0	451	1500
		06-25-84	4530	6.4	27.0	502	1350
174225064472000	--	01-26-84	1310	8.1	26.5	271	225
174243064475100	--	01-26-84	2020	7.2	27.0	358	445
174265064475800	116	01-26-84	1870	7.1	26.5	625	270
		06-25-84	1670	6.9	27.0	---	260
174103064484400	--	01-26-84	1520	7.0	26.0	487	220
		06-25-84	1700	6.5	27.5	492	200
174527064460120	12	01-27-84	1960	7.6	23.5	459	365
		06-25-84	2790	7.1	27.0	444	525
174329064654700	93	06-25-84	2960	7.5	26.5	597	650
		SAINT THOMAS, U.S. VIRGIN ISLANDS					
182350064583430	40	01-23-84	672	7.0	28.5	192	95
		06-28-84	1490	7.0	27.5	---	280
182136014541900	15	01-25-84	247	6.9	28.5	122	9
		06-28-84	317	---	28.0	---	11
182329064535200	30	01-25-84	1420	7.2	29.5	500	130
		06-29-84	1670	---	28.0	---	150
182338064553770	72	01-23-84	797	7.6	30.0	367	55
		06-29-84	850	---	---	---	74
		SAINT JOHN, U.S. VIRGIN ISLANDS					
[illegible]	99	01-26-84	576	8.4	28.5	287	55
		06-27-84	632	6.9	26.0	---	75
[illegible]	[illegible]	[illegible]	[illegible]	7.2	27.5	[illegible]	[illegible]
		[illegible]	[illegible]	7.2	[illegible]	---	[illegible]
[illegible]	73	[illegible]	[illegible]	7.5	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	7.8	[illegible]	[illegible]	79
		[illegible]	[illegible]	7.6	[illegible]	[illegible]	80
[illegible]	75	[illegible]	[illegible]	7.5	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	7.8	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-seven manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett St., Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
3-A9. *Measurement of time of travel and dispersion in streams by dye tracing*, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.
3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

INDEX

Page

Acre-foot, definition of ... 9
Adjuntas, Lago Garzas No. 1 near dam near ... 285,286,287,293,294,295
Adjuntas, Río Blanco near ... 246-247
Adjuntas, Río Grande de Arecibo near ... 48-49
Aguada, Río Culebra near ... 282
Aguada, Río Culebrinas near ... 264-265,282
Aguada, Río Ingenio near ... 282
Agua at Playa de Ponce, Quebrada del ... 281
Aguas Buenas, Río de Bayamón near ... 116-117
Aguas Claras basin, Quebrada, low-flow partial-record stations in ... 274
Aguas Claras near Ceiba, Quebrada ... 274
Aguas Verdes basin, Quebrada, ground-water records in ... 324
Algae, definition of ... 9
Analyses of samples collected at water-quality partial-record stations in Puerto Rico ... 285-295
Antón Ruiz at mouth, Río ... 276
  at Pasto Viejo ... 275
Antón Ruiz basin, Río, ground-water records in ... 313
  low-flow partial-record stations in ... 275-276
Añasco, Río Grande de Añasco near ... 256-257
Añasco Arriba, Río Grande de Añasco at ... 282
Apeadero basin, Río, ground-water records in ... 319
Aquifer, definition of ... 9
Arecibo, Río Grande de Arecibo above ... 56-58
Arroyo, Río Nigua at ... 279
Arroyo, Quebrada Corazón near ... 279
Arroyo, Quebrada Salada near ... 279
Artesian, definition of ... 9
Arus, Río Inabón near ... 280
Arus, Río Jacaguas at ... 280

Bairoa at mouth, Río ... 270
  near Caguas ... 143-144
Bacteria, definition of ... 9
Bahía de San Juan No. 5 at San Juan ... 127
Balboa, Río Yaguez at ... 282
Bayamón, at Flood Channel at Bayamón, Río de ... 120-121,268
  near Aguas Buenas ... 116-117
Bayamón basin, Río de, ground-water records in ... 310
  low-flow partial-record stations in ... 268
  water-quality records in ... 116-121
Bayamón, Caño de Quebrada Catalina at ... 268
Bayamón, Quebrada Santa Catalina at ... 268
Bayamón, Río Hondo at ... 268
Bayamón, Río Guaynabo near ... 118-119
Bayamón, Río Hondo II near ... 268
Bayaney, Río Camuy near ... 44
Beatriz above Río Turabo, Quebrada ... 269
Beatriz, Río Turabo below Quebrada ... 269
Bed material, definition of ... 10
Biochemical oxygen demand, definition of ... 10
Blanco at mouth, Río ... 275
  at Río Blanco ... 275
  below La Fe ... 275
  near Adjuntas ... 246-247
  near Florida ... 182-183
Blanco basin, Río, gaging station records in ... 180-183
  ground-water records in ... 312
  low-flow partial-record stations in ... 275
Blasina basin, Quebrada, low-flow partial-record stations in ... 269
  water-quality records in ... 130-131
Blasina near Carolina, Quebrada ... 130-131,269
Blue-green algae, definition of ... 14
Bonne Resolution Gut at Bonne Resolution, St. Thomas, VI ... 339-340
Boquerón at Boquerón, Quebrada ... 282
Boquerón basin, Quebrada, low-flow partial-record stations in ... 282
Boquerón, Laguna Cartagena near ... 232
Boqueron, Laguna Cartagena outflow near ... 233
Boquerón, Lajas Irrigation Canal near ... 227
Borinquen, Río Turabo at ... 137,269
Botija at Highway 31, Quebrada ... 275
Botija basin, Quebrada, low-flow partial-record stations in ... 275
Bottom material, definition of ... 10
Bucaná basin, Río, gaging station records in ... 212
  ground-water records in ... 331
  low-flow partial-record stations in ... 280
  water-quality records in ... 213-214
Bucaná at Ponce, Río ... 280

Page

Caguas, Lago Loíza No. 4 near mouth near ... 290,291
Caguas, Río Bairoa near ... 143-144
Caguas, Río Caguitas at Highway 30 at ... 141-142
Caguas, Río Grande de Loíza at ... 138-140
Caguas, Río Turabo at ... 270
Caguitas above mouth, Río ... 270
  at Highway 30 at Caguas ... 141-142
Caimito near Juncos, Quebrada ... 145
Calabazas, Río Guayanés at ... 277
Cambalache near Loíza, Quebrada ... 272
Camp Eliza Colberg, Río Espíritu Santo at ... 272
Campo Rico, Río Canóvanas near ... 156-157
Camuy basin, Río, gaging station records in ... 44-45
  low-flow partial-record stations in ... 267
Camuy at Capaez, Río ... 267
Camuy near Bayaney, Río ... 44
  near Hatillo ... 45
Canal Principal de Diversiones at Lago de Guajataca ... 37-38
Canal Principal de Riego Valle de Lajas basin, gaging stations records in ... 227
Candelero at Highway 906, Río ... 276
  at mouth ... 276
Candelero basin, Río, low-flow partial-record stations in ... 276
Canóvanas at La Marina, Río ... 271
  at Loíza ... 271
  near Campo Rico ... 156-157
Canovanillas at Carruzos, Río ... 271
  at Loíza ... 271
Cañas above Lago Loíza, Río ... 271
  below Las Américas Avenue ... 281
  near Santa Isabel ... 280
Cañas basin, Río, low-flow partial-record stations in ... 280
Caño de Quebrada Catalina at Bayamón ... 268
Caño Santiago near Central Roig ... 278
Caonillas above Lago Caonillas near Jayuya, Río ... 52-53
Capaez, Río Camuy at ... 267
Caparra Heights, Quebrada Margarita at ... 268
Carolina, Quebrada Blasina near ... 130-131,269
Carolina, Río Grande de Loíza above ... 271
Carolina, Río Grande de Loíza at ... 271
Carruzos, Río Canovanillas at ... 271
Castañer, Lago Guayo near ... 249
Castañer, Lago Prieto near ... 250
Castañer, Lago Yahuecas near ... 248
Cataño, Río Hondo at Flood Channel near ... 114-115
Cayaguas at Cerro Gordo, Río ... 135-136
Cayey, Lago Carite No. 1 near dam near ... 288,289,293,294,295
Cayey, Lago Carite No. 3 on Río de la Plata near ... 287,288
Ceiba at Ceiba, Quebrada ... 274
Ceiba basin, Quebrada, low-flow partial-record stations in ... 274
Ceiba Norte, Río Gurabo at ... 270
Ceiba, Quebrada Aguas Claras near ... 274
Cells/volume, definition of ... 10
Central Cambalache, Río Grande de Arecibo at ... 66-67
Central Guamaní, Río Seco near ... 279
Central Roig, Caño Santiago near ... 278
Central Roig, Río Guayanés at ... 277
Central Rufina, Río Guayanilla at ... 221-222
Central San Vicente, Drainage Ditch at Río Cibuco below ... 96-97
Central San Vicente, Río Cibuco below ... 98-99
Cerrillos near Ponce, Río ... 212-214
Cerro Gordo, Río Cayaguas at ... 135-136
Cfs-day, definition of ... 10
Charco Hondo, Río Tanamá at ... 65
Chico at Providencia, Río ... 197-198,278
Chico basin, Río, low-flow partial-record stations in ... 278
  water-quality records in ... 197-198
Chlorophyll, definition of ... 10
Ciales, Río Cialitos at Highway 649 at ... 79-80
Ciales, Río Grande de Manatí at ... 75-76
Ciales, Río Grande de Manatí at Highway 149 at ... 77-78
Cialitos at Highway 649 at Ciales, Río ... 79-80
Cibuco at Vega Baja, Río ... 91-93
  below Central San Vicente ... 98-99
  below Corozal ... 88-90
Cibuco basin, gaging-station records in ... 88-91
  ground-water records in ... 304-307
  low-flow partial-record stations in ... 267
  water-quality records in ... 89-99

INDEX

Page

Coamo basin, Río, gaging-station records in.......... 204,280
  ground-water records in..........................323,324-326
  low-flow partial-record stations.... 280
  water-quality records in............................ 205-206
Coamo near Coamo, Río............................... 204-206
  near Santa Isabel.................................. 280
Colonia Dolores, Río Herrera near...................... 272
Colonia Laura, Río Guayanés near...................... 275
Comerío, Río de la Plata near......................... 105-106
Control, definition of................................ 10
Control structure, definition of...................... 10
Cooperation 1-2
Corazón basin, Quebrada, low-flow partial-record
    stations in....................................... 279
Corazón near Arroyo, Quebrada......................... 279
Corozal, Río Cibuco below............................. 88-90
Crest-stage station, definition of.................... 10
Crest-stage partial-record stations, discharge at.... 283
Cubic feet per second per square mile, definition of. 10
Cubic foot per second, definition of.................. 10
Culebra basin, Río, low-flow partial-record stations
    in.. 282
Culebra near Aguada, Río 282
Culebrinas, at Highway 404 near Moca, Río............ 262-263
  near Aguada.......................................264-265,282
  near San Sebastián................................. 260-261
Culebrinas basin, Río, gaging station records in..... 262
  ground-water records in............................ 335
  low-flow partial-record stations in................ 282
  water-quality records in........................... 260-265

Daguao above mouth, Río............................... 274
  at Daguao.. 274
Daguao, Quebrada Palma at............................. 274
Daguao basin, Río, low-flow partial-record stations
    in.. 274
Damsite, Lago Loíza at................................ 153,271
Definition of terms................................... 9-16
De los Cedros basin, Quebrada, low-flow partial-
    record stations in................................ 267
De los Cedros near Isabela, Quebrada.................. 267
Demajagua at Demajagua, Río........................... 274
Demajagua basin, Río, low-flow partial-record
    station in.. 274
Descalabrado basin, Río, gaging stations records in.. 207,280
  low-flow partial-record stations in................ 280
Descalabrado near los Llanos, Río 207
  near Santa Isabel.................................. 280
Diatoms, definition of................................ 14
Discharge at crest-stage partial-record stations..... 283
Discharge at low-flow partial-record stations........ 267-282
Discharge at partial-record stations in Puerto Rico.. 267-282
Discharge, definition of.............................. 10
Dissolved, definition of.............................. 11
Diversity index, definition of........................ 11
Downstream order and station number.................. 16-17
Drainage area, definition of.......................... 11
Drainage basin, definition of......................... 11
Drainage ditch at Río Cibuco below Central San
    Vicente... 96-97
  below Warner Lambert Lab. near Sabana.............. 94-95

El Mango, Río Gurabo at............................... 270
El Verde, Quebrada Sonadora near...................... 160
El Verde, Quebrada Toronja at......................... 161-162
El Verde, Río Grande near............................. 272
Espíritu Santo basin, Río, gaging station records in. 160-163
  low-flow partial-record stations in................ 272
  water-quality records in........................... 164-165
Espíritu Santo at Camp Eliza Colberg, Río............ 272
  near Río Grande.................................... 163-165
Explanation of ground-water level records............ 24-25
Explanation of stage and water-discharge records..... 18-22
Explanation of water-quality records.................. 22-24

Fajardo at Fajardo, Río............................... 274
  at Vapor below confluence.......................... 273
  below Fajardo...................................... 178-179
  near Fajardo....................................... 172-177
Fajardo at Highway 194, Quebrada...................... 273
Fajardo basin, Quebrada, low-flow partial-record
    stations in....................................... 273
Fajardo basin, Río, gaging station records in........ 172
  low-flow partial-record stations in................ 273-274
  water-quality records in........................... 173-179

Page

Fajardo, Quebrada Mata Redonda near................... 274
Fecal coliform bacteria, definition of 9
Fecal streptococcal bacteria, definition of.......... 9
Florida, Río Blanco near.............................. 182-183
Florida, Río Grande de Arecibo below Lago Dos
    Bocas near 54-55

Gage-height, definition of............................ 11
Gaging station, definition of......................... 11
Grande at La Gloria, Quebrada......................... 271
Grande basin, Río, low-flow partial-record stations
    in.. 282
Grande de Añasco basin, Río, gaging station
    records in.. 246-253
  ground-water records in............................ 334
  low-flow partial-record stations in................ 282
  water-quality records in........................... 251-257
Grande de Añasco at Añasco Arriba, Río............... 282
  near Añasco.. 256-257
  near Lares... 251-252
  near San Sebastián................................. 253-255
Grande de Arecibo at Central Cambalache, Río......... 66-67
  above Arecibo...................................... 56-58
  below Lago Dos Bocas near Florida.................. 54-55
  near Adjuntas...................................... 48-49
  near Utuado 50-51
Grande de Arecibo basin, Río, gaging station records
    in.. 56-65
  ground-water records in............................ 300
  water-quality partial-record stations, analyses of
      samples collected in.........285,286,287,288,289,294
  water-quality records in........................... 48-67
Grande de Loíza above Carolina, Río................... 271
  at Caguas.. 138-140
  at Carolina.. 271
  at Highway 183..................................... 269
  at Jagual.. 269
  at Quebrada Arenas................................. 132-133
  at San Lorenzo Norte............................... 269
  below Río Emajagua................................. 269
  below Trujillo Alto................................ 154-155
Grande de Loíza basin, Río, gaging station records
    in.. 132-156
  ground-water records in............................ 311
  low-flow partial-record stations in................ 269-271
  water-quality partial-record stations, analyses
      of samples collected in......290,291,292,293,294,295
  water-quality records in........................... 130-157
Grande de Manatí at Ciales, Río....................... 75-76
  at Highway 2 near Manatí........................... 81-84
  at Highway 149 at Ciales........................... 77-78
  near Morovis....................................... 72-74
Grande de Manatí basin, Río, gaging station records
    in.. 72-81
  ground-water records in 301-303
  water-quality records in........................... 70-85
Grande de Patillas at Patillas, Río................... 278
  at Providencia..................................... 278
  below Quebrada Sonadora............................ 278
  near Patillas...................................... 199-201
Grande de Patillas basin, Río, gaging station
    records in.. 199
  low-flow partial-record stations in................ 278
  water-quality records in........................... 200-201
Grande at Río Grande, Río............................. 272
  near El Verde...................................... 272
  near Rincón.. 282
Green algae, definition of............................ 14
Ground-water records for Puerto Rico.................. 298-335
Ground-water records for U.S. Virgin Islands......... 348-365
Ground-water records for U.S. Virgin Islands,
    quality of.. 366
Ground-water level records, explanation of........... 24-25
Ground-water station, definition of................... 11
Ground-water stations in Puerto Rico, map showing
    location of....................................... 298
Ground-water wells in U.S. Virgin Islands, map
    showing location of............................... 348
Guadiana near Naranjito, Río.......................... 107-108
Guajataca above Lago de Guajataca, Río................ 36
  above mouth near Quebradillas.....................40-42,267
  at Lares... 34-35
  below Lago de Guajataca............................ 39

INDEX

Page

Guajataca basin, Río, gaging station records in...... 36-40
  ground-water records in.............................. 299
  low-flow partial-record stations in.................. 267
  water-quality partial-record stations, analyses of
      samples collected in............................ 285-266
  water-quality records in............................. 34-42
Guamaní basin, Río, ground-water records in.......... 317
  low-flow partial-record stations in.................. 279,282
Guamaní near Guayama, Río............................ 279
Guanajibo below San Germán, Río...................... 282
  near Hormigueros..................................... 240-242
  near San Germán......................................234-235,282
Guanajibo basin, Río, gaging station records in...... 236
  ground-water records in.............................. 232-333
  low-flow partial-record stations in.................. 282
  water-quality records in............................. 234-242
Guánica, Río Loco at................................. 228-229
Guánica, Río Loco near............................... 281
Guayama, Río Guamaní near............................ 279
Guayanés above mouth at Playa de Guayanés, Río....... 191-192
  at Calabazas... 277
  at Central Roig...................................... 277
  at Playa de Guayanés................................. 191-192
  at Yabucoa...189-190,277
  below Río Arenas..................................... 277
  near Colonia Laura................................... 276
  near mouth near Playa de Guayanés.................... 277
Guayanés basin, Río, ground-water records in......... 317-318
  low-flow partial-record stations in.................. 276-277
  water-quality records in............................. 189-192
Guayanilla at Central Rufina, Río.................... 221-222
  near Guayanilla...................................... 220
Guayanilla basin, Río, gaging station records in..... 220
  ground-water records in.............................. 328
  water-quality records in............................. 221-222
Guaynabo near Bayamón, Río........................... 118-119
Guinea Gut at Bethany, St. John, VI.................. 343
Gurabo at Gurabo, Río................................ 149-150
  at Ceiba Norte....................................... 270
  at El Mango.. 270
  below Highway 943.................................... 270
  near Gurabo.. 151-152
  near Juncos.. 270
Gurabo, Quebrada Mamey near.......................... 148

Hacienda San Isidro, Río Jacaboa at.................. 278
Hardness, definition of.............................. 11
Hatillo, Río Camuy near.............................. 45
Hato Rey, Río Piedras at 124-125
Herrera near Colonia Dolores, Río.................... 272
  near Loíza... 272
Herrera basin, Río, low-flow partial-record stations
      in... 272
Honda at Las Torres, Quebrada........................ 270
Hondo at Bayamón, Río................................ 268
  at Flood Channel near Cataño, Río.................... 114-115
Hondo II near Bayamón, Río........................... 268
Hondo basin, Río, low-flow partial-record stations
      in... 268
  water-quality records in............................. 114-115
Hormigueros, Río Guanajibo near 240-242
Hormigueros, Río Rosario near........................ 238-239
Humacao at Highway 3 at Humacao, Río................. 186-188
  at Las Piedras....................................... 276
  Flood Channel near mouth............................. 276
  near Humacao... 276
Humacao basin, Río, gaging station records in........ 186
  ground-water records in.............................. 320
  low-flow partial-record stations in.................. 276
  water-quality records in............................. 187-188
Hydrologic conditions, summary of.................... 2-8

Icacos near Naguabo, Río............................. 180-181
Inabón at Real Abajo, Río............................ 210-211
  near Arus.. 280
Inabón basin, Río, gaging station records in......... 210-211
  low-flow partial-record stations in.................. 280
Indio near Vega Baja, Río............................ 267
Ingenio basin, Río, low-flow partial-record
      stations in...................................... 282
Ingenio basin, Río del, ground-water records in...... 335
Ingenio near Aguada, Río............................. 282
Ingenio near Playa de Guayanés, Río del.............. 277
  near Yabucoa... 277

Instantaneous discharge, definition of............... 11
Introduction... 1
Isabela, Quebrada de los Cedros near................. 267

Jacaboa at Hacienda San Isidro, Río.................. 278
Jacaboa basin, Río, low-flow partial-record stations
      in... 278
Jacaguas at Arus, Río................................ 280
  at Juana Díaz.. 208
Jacaguas basin, Río, gaging station records in....... 208
  ground-water records in.............................. 324
  low-flow, partial-record stations in................. 280
Jagual, Río Grande de Loíza at....................... 269
Jauca, Río Jueyes near............................... 280
Jayuya, Río Caonillas above Lago Caonillas near...... 52-53
Jimenez near Río Grande, Quebrada.................... 272
Jobos, Río Melanía near.............................. 279
Jolly Hill Gut at Jolly Hill, St. Croix, VI.......... 344-345
Josefina at Piñeiro Avenue, Quebrada................. 268
Juan González near Río Grande, Quebrada.............. 272
Juan Martín above mouth, Río......................... 273
  at Highway 3, Tributary to........................... 273
Juan Martín basin, Río, low-flow partial-record
      stations in...................................... 273
Juana Díaz, Río Jacaguas at.......................... 208
Jueyes basin, Río, low-flow partial-record stations
      in... 280
Jueyes near Jauca, Río............................... 280
Juncos, Quebrado Caimito near........................ 145
Juncos, Río Gurabo near.............................. 270
Juncos, Río Valenciano near.......................... 146-147

La Fe, Río Blanco below.............................. 275
La Fe, Quebrada Vaca below........................... 275
La Gloria, Quebrada Grande at........................ 271
Lago Carite No.1 near dam near Cayey......288,289,293,294,295
  No. 3 on Río de la Plata near Cayey.................. 287,288
Lago de Guajataca, Canal Principal de Diversiones at. 37-38
  No. 1 near dam near Quebradillas..................... 285,286
  No. 3 near mouth near Quebradillas................... 285,286
  Río Guajataca above.................................. 36
  Río Guajataca below.................................. 39
Lago Dos Bocas No. 1 near dam near
      Utuado......................... 287,288,289,294,295
  No. 3 at west branch near Utuado..................... 287 288
Lago Garzas No. 1 near dam near
      Adjuntas... 285,286,287
Lago Guayo near Castañer............................. 249
Lago La Plata No. 3 near dam near
      Naranjito......................290,291,292,293,294,295
  No. 5 near mouth near Naranjito...................... 289,290
Lago Loíza at damsite................................ 153,271
  No. 4 near mouth near Caguas......................... 290,291
  No. 7 near dam near Trujillo Alto...290,291,292,293,294,295
Lago Loíza, Río Cañas above.......................... 271
Lago Prieto near Castañer............................ 250
Lago Yahuecas near Castañer.......................... 248
Laguna Cartagena basin, gaging station records in.... 232-233
Laguna Cartagena near Boqueron....................... 232
Laguna Cartagena outflow near Boquerón............... 233
Laguna San José No. 2 at San Juan.................... 126
Laguna Tortuguero basin, water-quality records in.... 85
Laguna Tortuguero outlet near Vega Baja.............. 85
Lajas at Toa Alta, Río............................... 267
Lajas Irrigation Canal near Boquerón................. 227
La Marina, Río Canóvanas at.......................... 271
La Plata at Proyecto La Plata, Río de................ 102-104
  at Toa Alta.. 109-112
  near Comerío... 105-106
La Plata basin, Río de, gaging station records in.... 102-109
  ground-water records in 308-309
  low-flow partial-record stations in.................. 267
  water-quality partial-record stations, analyses of
      samples collected in..287,288,289,290,292,293,294,295
  water-quality records in............................. 103-112
Lares, Río Grande de Añasco near..................... 251-252
Lares, Río Guajataca at.............................. 34-35
Las Bambuas at mouth, Quebrada 269
Las Piedras, Río Humacao at.......................... 276
Las Piedras, Río Valenciano near..................... 270
Las Torres, Quebrada Honda at........................ 270
Levels for Puerto Rico, ground-water................. 298-335
Levels for U.S. Virgin Islands, ground water......... 348-365
Limones near Yabucoa, Río............................ 277

INDEX

Page

Lizas, Río Maunabo at 193-194
Loco at Guánica, Río 228-229
  near Guánica 281
Loco basin, Río, low-flow partial-record stations in. 281
  water-quality records in 228-229
Loíza, Quebrada Cambalache near 272
Loíza, Río Canovanas at 271
Loíza, Río Canovanillas at 271
Loíza, Río Herrera near 272
Los Llanos, Río Descalabrado near 207
Low-flow partial-record stations, Discharge at 267-283
Low-flow partial-record in Eastern Puerto Rico, map showing 30
Low-flow partial-record in Western Puerto Rico, map showing 31
Luquillo, Quebrada Mata de Plátano near 273
Luquillo, Río Pitahaya near 273
Luquillo, Río Sabana at 273

Macaná at Magas Arriba, Río 281
Macaná basin, Río, low-flow partial-record stations in 281
Magas Arriba, Río Macaná at 281
Majada at Rabo del Buey, Río 279
Mamey near Gurabo, Quebrada 148
Mameyes at Mameyes, Río 273
  at Highway 191 at Mameyes 168-169
  near Sabana 166-167
Mameyes basin, Río, gaging station records in 166-169
  low-flow partial-record stations in 273
Manatí, Río Grande de Manatí at Highway 2 near 81-84
Maps:
  Location of ground-water stations in Puerto Rico 298
  Location of ground-water wells in U.S. Virgin Islands 348
  Location of low-flow partial-record stations in Eastern Puerto Rico 30
  Location of low-flow partial-record stations in Central and Western Puerto Rico 31
  Location of surface-water stations in the U.S. Virgin Islands 338
  Location of surface-water stations in Puerto Rico 28
  Location of water-quality stations in Puerto Rico 29
  Río Camuy basin 43
  Río Cibuco basin 87
  Río Culebrinas basin 259
  Río Grande de Arecibo basin 47
  Río Grande de Loíza basin 129
  Río Grande de Manatí basin 69
  Río Guajataca basin 33
  Río Guanajibo basin 231
  Río Herrera to Río Antón Ruiz basins 159
  Río Hondo to Río Puerto Nuevo basins 113
  Río Humacao to Río Seco basins 185
  Río Inabón to Río Loco basins 209
  Río de la Plata basin 101
  Río Salinas to Río Jacaguas basins 203
  Río Yagüez and Río Grande de Añasco basins 243
Maracuta at Trujillo Bajo, Quebrada 271
Margarita at Caparra Heights, Quebrada 268
Mariana at Patagonia, Quebrada 276
Mata de Plátano basin, Quebrada, low-flow partial-record stations in 273
Mata de Plátano near Luquillo, Quebrada 273
Mata Redonda near Fajardo, Quebrada 274
Matilde basin, Río, low-flow partial-record stations in 281
Maunabo at Lizas, Río 193-194
  at Maunabo 195-196,278
Maunabo basin, Río, gaging station records in 193-194
  ground-water records in 319
  low-flow partial-record stations in 278
  water-quality records in 195-196
Mayagüez, Río Yagüez near 244-245
Mean concentration, definition of 15
Mean discharge, definition of 11
Melanía basin, Río, low-flow partial-record stations in 279
Melanía near Jobos, Río 279
Micrograms per gram, definition of 12
Micrograms per liter, definition of 12
Milligrams per liter, definition of 12
Miscellaneous sites, numbering system for wells and 17
Moca, Río Culebrinas at Highway 404 near 262-263
Morovis, Río Grande de Manatí near 72-74

Page

Naguabo, Río Icacos near 180-181
Naguabo, Río Santiago at 275
Naranjito, Lago La Plata No. 3 near dam near 290,291,292,293,294,295
Naranjito, Lago La Plata No. 5 near mouth near 289,290
Naranjito, Río Guadiana near 107-108
NASQAN, definition of 17-18
National stream-quality accounting network 17-18
Networks and programs, special 17-18
Nigua at Arroyo, Río 279
Nigua basin, Río, ground-water records in 316
  low-flow partial-record stations in 279
Numbering system for wells and miscellaneous sites 17

Organism, definition of 12
Organism count/area, definition of 12
Organism count/volume, definition of 12
Orocovis near Orocovis, Río 70-71

Palma at Daguao, Quebrada 274
Palma basin, Quebrada, low-flow partial-record stations in 274
Palomas, Quebrada Susúa at 281
Partial record station, definition of 13
Partial-record stations, Discharge at 267-282
Partial-record stations in Central and Western Puerto Rico, map showing location of 31
Partial-record stations in Eastern Puerto Rico, map showing location of 30
Particle size, definition of 13
Particle-size classification, definition of 13
Pasto Viejo, Río Antón Ruiz at 275
Patagonia, Quebrada Mariana at 276
Patillas, Río Grande de Patillas at 278
Patillas, Río Grande de Patillas near 199-201
PCBs, definition of 14
Percent composition, definition of 13
Pesticides, definition of 13
Pesticide program 18
Phytoplankton, definition of 13
Piedras, at Hato Rey, Río 124-125
  at Río Piedras 268
  near Río Piedras 122-123
Piñeiro Avenue, Quebrada Josefina at 268
Pitahaya basin, Río, low-flow partial-record stations in 273
Pitahaya near Luquillo, Río 273
Plankton, definition of 13
Playa de Guayanés, Río del Ingenio near 277
Playa de Guayanés, Río Guayanés above mouth at 191-192
Playa de Guayanés, Río Guayanés at 277
Playa de Guayanés, Río Guayanés near mouth near 277
Playa de Ponce, Quebrada del Agua at 281
Polychlorinated biphenyls, definition of 14
Ponce, Río Bucaná at 280
Ponce, Río Cerrillos near 212-214
Ponce, Río Portugués at 218-219
Ponce, Río Portugués at Highway 14 at 283
Ponce, Río Portugués at Highway 2 by-pass at 281
Ponce, Río Portugués near 215-217
Portugués at Highway 14 at Ponce, Río 283
  at Highway 2 by-pass at Ponce 281
  at Ponce 218-219
  near Ponce 215-217
Portugués basin, Río, crest-stage partial-record station in 283
  gaging station records in 215
  ground-water records in 327
  low-flow partial records stations in 281
  water-quality records in 216-219
Programs, special networks and 17-18
Providencia, Río Chico at 197-198,278
Providencia, Río Grande de Patillas at 278
Proyecto La Plata, Río de La Plata at 102-104
Publications on techniques of water-resources investigations 367
Puerto Nuevo basin, Río, ground-water records in 310
  low-flow partial-record stations in 268
  water-quality records in 122-127

Quality of ground water for U.S. Virgin Islands 348-365
Quebrada Arenas, Río Grande de Loíza at 132-133
Quebrada Sonadora, Río Grande de Patillas below 278
Quebradillas, Lago Guajataca No. 1 near dam near 285,286,293,294,295

INDEX

Page

Quebradillas, Lago Guajataca No. 3 near mouth near... 285,286
Quebradillas, Río Guajataca above mouth near.........40-42,267

Rabo del Buey, Río Majada at.......................... 279
Real Abajo, Río Inabón at 210-211
Rincón, Río Grande near............................... 282
Río Arenas, Río Guayanés below........................ 277
Río Emajagua, Río Grande de Loíza below............... 269
Río Grande, Quebrada Jiménez near..................... 272
Río Grande, Quebrada Juan González near.. 272
Río Grande, Río Espíritu Santo near................... 163-165
Rosario at Rosario, Río............................... 236-237
near Hormigueros...................................... 238-239
Runoff, in inches, definition of...................... 14

Sabana at Luquillo, Río............................... 273
at Sabana... 170-171
Sabana basin, Río, gaging station records in.......... 170-171
low-flow partial-record stations in................... 273
Sabana, Drainage ditch below Warner Lambert
Lab. near... 94-95
Sabana, Río Mameyes near.............................. 166-167
Salada basin, Quebrada, low-flow partial-record
stations in... 279
Salada near Arroyo, Quebrada.......................... 279
Salinas at Salinas, Río............................... 279
Salinas basin, Río, ground-water records in........... 321,322
low-flow partial-record stations in................... 279
Salvatierra near San Lorenzo, Quebrada................ 134
San Germán, Río Guanajibo below....................... 282
San Germán, Río Guanajibo near........................ 234-235
San Juan, Bahía de San Juan no. 5 at.................. 127
San Juan, Laguna San José No. 2 at 126
San Lorenzo, Quebrada Salvatierra near................ 134
San Lorenzo Norte, Río Grande de Loíza at............. 269
San Sebastián, Río Culebrinas near.................... 260-261
San Sebastián, Río Grande de Añasco near.............. 253-255
Santa Catalina at Bayamón, Quebrada................... 268
Santa Isabel, Río Cañas near.......................... 280
Santa Isabel, Río Coamo near.......................... 280
Santa Isabel, Río Descalabrado near................... 280
Santiago at Naguabo, Río 275
Santiago at Highway 3, Caño........................... 278
near Central Roig..................................... 278
Santiago basin, Caño, low-flow partial-record
stations in... 278
Santiago basin, Río, low-flow partial-record stations
in.. 275
Seco basin, Río, ground-water records in 314-315
low-flow partial-record stations in................... 279
Seco near Central Guamaní, Río........................ 279
Sediment.. 24
Sediment, definition of............................... 14
Sonadora near El Verde, Quebrada...................... 160
Solute, definition of................................. 15
Special network and programs.......................... 17-18
Specific conductance, definition of................... 15
Stage and water-discharge records, explanation of.... 18-22
Stage-discharge relation, definition of............... 15
Station number, downstream order and.................. 16-17
St. Croix, VI, Jolly Hill Gut at Jolly Hill........... 344-345
St. John, VI, Guinea Gut at Bethany................... 343
Streamflow, definition of............................. 15
St. Thomas, VI, Bonne Resolution Gut at Bonne
Resolution.. 339-340
St. Thomas, VI, Turpentine Run at Mariendal........... 341-342
Summary of hydrologic conditions...................... 2-8
Surface and quality-of-water records for Puerto Rico. 33-265
Surface-water records for U.S. Virgin Islands......... 338-345
Surface-water stations in Puerto Rico, map
showing location of................................... 28

Surface-water stations in U.S. Virgin Islands, map
showing location of................................... 338
Surficial bed material, definition of................. 15
Suspended, definition of.............................. 15
Suspended sediment, definition of..................... 14
Suspended-sediment concentration, definition of...... 14
Suspended-sediment discharge, definition of........... 14
Suspended-sediment load, definition of................ 14
Susúa at Palomas, Quebrada............................ 281

Tallaboa at Tallaboa, Río............................. 281
Tallaboa basin, Río, low-flow partial-record stations
in.. 281
Tanamá at Charco Hondo, Río........................... 65
near Utuado... 59-64
Taxonomy, definition of............................... 16
Techniques of water-resources investigations,
publications on....................................... 367
Temperature, water.................................... 23
Terms, definition of.................................. 9-16
Time-weighted average, definition of.................. 15
Toa Alta, Río de La Plata at 109-112
Toa Alta, Río Lajas at................................ 267
Tons per acre-foot, definition of..................... 15
Tons per day, definition of........................... 15
Toronja at El Verde, Quebrada......................... 161-162
Total coliform bacteria, definition of................ 9
Total load, definition of............................. 16
Total organism count, definition of................... 13
Total sediment discharge, definition of............... 15
Tributary to Río Juan Martín at Highway 3............. 273
Tributary to Río Santiago at Highway 192.............. 275
Tritium network....................................... 18
Trujillo Alto, Lago Loíza No. 7 near
dam near......................290,291,292,293,294,295
Trujillo Alto, Río Grande de Loíza below.............. 154-155
Trujillo Bajo, Quebrada Maracuta at................... 271
Turabo at Borinquen, Río.............................. 137,269
at Caguas... 270
below Quebrada Beatriz................................ 269
Turabo, Quebrada Beatriz above Río.................... 269
Turpentine Run at Mariendal, St. Thomas, VI........... 341-342

Utuado, Lago Dos Bocas No. 1 near dam
near..........................287,288,289,293,294,295
Utuado, Lago Dos Bocas No. 3 at west branch near..... 287,288
Utuado, Río Grande de Arecibo near.................... 50-51
Utuado, Río Tanamá near............................... 59-64

Vaca below La Fe, Quebrada............................ 275
Valenciano at mouth, Río.............................. 270
near Juncos... 146-147
near Las Piedras...................................... 270
Vapor below confluence, Río Fajardo at................ 273
Vega Baja, Laguna Tortuguero outlet near.............. 85
Vega Baja, Río Cibuco at.............................. 91-93
Vega Baja, Río Indio near............................. 267

Water analysis.. 23
Water-discharge records, explanation of stage and.... 18-22
Water-quality partial-record stations in Puerto Rico,
analyses of samples collected at...................... 285-295
Water-quality records, explanation of................. 22-24
Water-quality stations in Puerto Rico, map
showing location of................................... 29
Water-resources investigations, publications on
techniques of 367
Water temperature..................................... 23
Water year, definition of............................. 16
Weighted average, definition of....................... 16

INDEX

Page

Wells - Puerto Rico:
  Aguas Verdes basin, Quebrada
    Well 124 - Coquí 2.................................. 324
  Antón Ruiz basin, Río
    Well 173, Squibb.................................... 313
  Apeadero basin, Río
    Well 125 - Patillas STP............................. 319
  Bayamón basin, Río de
    Well 42 - Cidra 2................................... 310
    Well 66 - Sabana Seca............................... 310
  Blanco basin, Río
    Well 171, Arroyo.................................... 312
  Bucaná basin, Río
    Well 141 - Restaurada 8A............................ 331
  Cibuco basin, Río
    Well 62 - Vega Alta 1............................... 304
    Well 70 - Sabana Hoyos.............................. 305
    Well 151 - Rice Program #3.......................... 306
    Well 155 - La Trocha................................ 306
    Well 156 - El Criollo #1............................ 306
    Well 167 - USGS Observation Well #3................. 307
    Well 168 - Rice Program #4.......................... 307
    Well 169 - Rice Program #5.......................... 307
  Coamo basin, Río
    Well 87 - Alomar 1.................................. 323
    Well 144 - Jauca south well, site 1................. 324
    Well 145 - Jauca north well, site 1................. 325
    Well 146 - Hacienda Alomar west well, site 3........ 325
    Well 147 - Hacienda Alomar east well, site 3........ 325
    Well 148 - Playa Santa Isabel east well, site 2..... 326
    Well 149 - Playa Santa Isabel west well, site 2..... 326
  Culebrinas basin, Río
    Well 83 - San Sebastián............................. 335
  Grande de Añasco basin, Río
    Well 53 - Mayagüez Airport.......................... 334
  Grande de Arecibo basin, Río
    Well 86 - Adjuntas.................................. 300
    Well 123 - Jayuya 3 300
    Well 161 - Santana #2............................... 300
  Grande de Loíza basin, Río
    Well 50 - Gurabo.................................... 311
    Well 52 - Bairoa.................................... 311
  Grande de Manatí basin, Río
    Well 68 - Manatí 2.................................. 301
    Well 71 - Florida Afuera, Barceloneta............... 301
    Well 135 - Lederle.................................. 302
    Well 142 - Morán Simó............................... 303
    Well 166 - Manatí (new well)........................ 303
  Guamaní basin, Río
    Well 89 - Phillips observation well 3............... 317
  Guajataca basin, Río
    Well 164 - Rocha Moca............................... 299
    Well 165 - Mateo Pérez, Bo. Salto................... 299
  Guanajibo basin, Río
    Well 40 - Rosario................................... 332
    Well 43 - Central Rochelaise........................ 332
    Well 143 - Vivoni, Hacienda Amistad................. 333
  Guayanés basin, Río
    Well 31 - Central Roig.............................. 317
    Well 96 - USGS TW-2 or Yabucoa 7 318
  Guayanilla basin, Río
    Well 27 - Quebradas................................. 327
    Well 74 - Guayanilla 328
  Humacao basin, Río
    Well 172 - Humacao.................................. 320
  Ingenio basin, Río del
    Well 58 - Aguada.................................... 335
  Jacaguas basin, Río
    Well 88 - Hacienda Potála........................... 324
  La Plata basin, Río de
    Well 33 - Cayey 10.................................. 308
    Well 37 - Barrio Rincón de Cidra.................... 308
    Well 38 - Barrio Robles............................. 308
    Well 67 - Campanilla................................ 309
    Well 69 - Higuillar................................. 309
    Well 150 - Monterey Forestal........................ 309

Page

  Maunabo basin, Río
    Well 122 - Maunabo Calzada.......................... 319
  Nigua basin, Río
    Well 15 - Pitahaya 1................................ 316
  Portugués basin, Río
    Well 21 - Alhambra.................................. 327
  Puerto Nuevo basin, Río
    Well 63 - Hato Rey Central, McCraken................ 310
  Salinas basin, Río
    Well 1 - Mar Negro.................................. 321
    Well 8 - Salinas 1.................................. 321
    Well 18 - Cocos..................................... 322
    Well 19 - Theater 1................................. 322
  Seco basin, Río
    Well 2 - Puente Jobos............................... 314
    Well 3 - Jobos 314
    Well 6 - Juana 5.................................... 315

Wells (continued) - U.S. Virgin Islands:
  St. Croix
    Well 1 - Fairplains 6 (FP6)......................... 349
    Well 2 - USGS-10, Fairplains 2 (FP2)................ 350
    Well 3 - Golden Grove 6 (PW6)....................... 351
    Well 4 - Golden Grove 1 (PW1)....................... 352
    Well 5 - Mahogany Road 3............................ 352
    Well 6 - Adventure 28............................... 353
    Well 7 - Concordia 14............................... 354
    Well 8 - Concordia 1 (main pump house).............. 354
    Well 9 - Concordia 7................................ 355
    Well 10 - Barren Spot 5 (PWD-5)..................... 355
  St. John
    Well 1 - NPS-2 (Cruz Bay)........................... 359
    Well 2 - NPS-5 (Trunk Bay).......................... 359
    Well 3 - NPS-6 (Cinnamon Bay)....................... 360
    Well 4 - USGS-15 (Calabash Boom).................... 361
    Well 5 - DPW-6...................................... 362
    Well 6 - DPW-5...................................... 363
    Well 7 - DPW-4...................................... 363
    Well 8 - DPW-3...................................... 363
    Well 9 - DPW-2... 364
    Well 10 - DPW-1..................................... 364
    Well 11 - Guinea Gut Well........................... 365
  St. Thomas
    Well 1 - USGS-8 (Family well-Thatch Farm)........... 356
    Well 2 - Mahogany 15................................ 356
    Well 3 - Mahogany 16................................ 356
    Well 4 - Mahogany 17................................ 357
    Well 5 - Donoe 3.................................... 357
    Well 6 - Grade School 3............................. 358
  Yagüez basin, Río
    Well 45 - Well 1, Mayagüez.......................... 334
  Yauco basin, Río
    Well 16 - Central San Francisco..................... 327
    Well 131 - Yauco 1 or UCC 2......................... 328
    Well 132 - Yauco 2.................................. 329
    Well 134 - Yauco 4 or UCC 1......................... 330
Wells and miscellaneous sites, numbering system
  for 17
WRD, definition of...................................... 16
WSP, definition of...................................... 16

Yabucoa, Río del Ingenio near........................... 277
Yabucoa, Río Guayanés at........................189-190,277
Yabucoa, Río Limones near............................... 277
Yagüez at Balboa, Río................................... 282
  near Mayagüez..................................... 244-245
Yagüez basin, Río, ground-water records in.............. 334
  low-flow partial-record stations in................... 282
  water-quality records in.......................... 244,245
Yauco, above Diversión Monserrate near Yauco, Río.... 223-224
  at Pueblo Sur at Yauco................................ 281
  near Yauco.. 225-226
Yauco basin, Río, gaging station records in......... 223-226
  ground-water records in....................327,328,329,330
  low-flow partial-record stations in................... 281

Introduction, definition of terms, and explanation of data (1)

Continuous surface-water stations in Puerto Rico (28)
Water-quality stations in Puerto Rico (29)
Low-flow partial-record stations in Puerto Rico (30)

Río Guajataca basin (33)
Río Camuy basin (43)
Río Grande de Arecibo basin (47)
Río Grande de Manatí basin (69)
Río Cibuco basin (87)
Río de la Plata basin (101)
Río Hondo, Río de Bayamón, and Río Puerto Nuevo basins (113)
Río Grande de Loíza basin (129)
Northeastern river basins - Río Herrera to Río Antón Ruiz (159)
Southeastern river basins - Río Humacao to Río Seco (185)
South coast river basins - Río Salinas to Río Jacaguas (203)
South coast river basins - Río Inabón to Río Loco (209)
Río Guanajibo basin (231)
Río Yaguez and Río Grande de Añasco basins (243)
Río Culebrinas basin (259)

Partial-record stations (267)

Water-quality partial-record stations (285)

Ground-water stations in Puerto Rico (298)

Surface-water stations in the U.S. Virgin Islands (338)
Ground-water stations in the U.S. Virgin Islands (348)

Publications on techniques of water-resources investigations (367)

Index (369)

MARGIN INDEX

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